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The Commonwealth of Massachusetts

ANNUAL REPORT

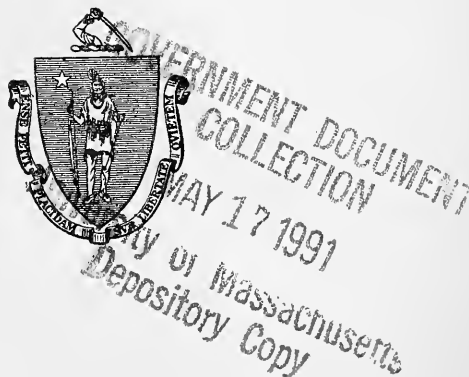
OF THE

DEPARTMENT OF LABOR AND INDUSTRIES

FOR THE

YEAR ENDING NOVEMBER 30, 1927

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ETHEL M. JOHNSON, BOSTON, *Assistant Commissioner*.

EDWARD FISHER, LOWELL, *Associate Commissioner*.

HERBERT P. WASGATT, WABAN, *Associate Commissioner*.

SAMUEL ROSS, NEW BEDFORD, *Associate Commissioner*.

HEADS OF DIVISIONS AND BRANCHES.

Board of Conciliation and Arbitration.

EDWARD FISHER. HERBERT P. WASGATT. SAMUEL ROSS.

Division of Minimum Wage. ETHEL M. JOHNSON, *Acting Director*.

EDWARD FISHER. HERBERT P. WASGATT. SAMUEL ROSS.

Division of Statistics. ROSWELL F. PHELPS, *Director*.

MARGARET SHEA, *Statistician for Manufactures*.

LESTER E. ARCHIBALD, *Statistician for Labor*.

Division of Industrial Safety. JOHN P. MEADE, *Director*.

JOSEPH MONETTE, *Counsel*.

Division of Standards. FRANCIS MEREDITH, *Director of Standards*.

PUBLIC EMPLOYMENT OFFICES.

Boston. HARRY G. DUNDERDALE, *Superintendent*.

Springfield. CHESTER A. ALLEN, *Superintendent*.

Worcester. WILLIAM A. WILDER, *Superintendent*.

Federal Director of Employment Service.

E. LEROY SWEETSER, *Commissioner*.

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REPORT OF THE COMMISSIONER OF LABOR AND INDUSTRIES

To the General Court.

The Annual Report of the Commissioner of Labor and Industries for the year ending November 30, 1927, is submitted herewith.

The work is carried on under the general direction of the commissioner through the several divisions of the department as now organized. Reports of the work of each division, describing in detail the results accomplished, are included in this report.

Hearings. Under section 34 of chapter 149 of the General Laws, the commissioner has authority, when in his opinion public necessity so requires, to permit laborers, workmen and mechanics to work more than eight hours in any one day under contracts entered into by the Department of Public Works for the construction or reconstruction of highways. Forty-two requests to permit such employment were received and after an investigation in each case, 25 requests were granted and 17 were refused.

Only one petition relative to customary and prevailing rate of wages was heard before the full board. This petition was brought under chapter 149, section 27 of the General Laws and the question at issue was the customary and prevailing rate of wages in the locality where the specific work was being done, which in this case had reference to the wages paid to bridge carpenters and pile drivers in Boston and vicinity. All other controversies were adjusted by the commissioner without a hearing before the full board.

Inspections. The inspection force assigned to the Division of Industrial Safety now consists of 40 inspectors; 34 men and six women, including the eight inspectors of building operations. Two of the industrial inspectors are physicians and two of the women inspectors are graduate nurses. The inspectors made 58,846 inspections and reinspections during the year. They visited in all 42,283 establishments in which 921,046 men, women and children were employed. The department, as a result of these inspections, issued 16,146 orders for compliance with the laws and rules and regulations.

The inspection force was increased during the year by the addition of four inspectors of building operations. There are now eight inspectors of building operations. It is the duty of these inspectors to see that operations in the building trades are carried on with proper regard for the safety of the employees. The work is primarily that of prevention of accidents in the building trades.

Complaints. The department received 692 complaints of alleged violations of the labor laws during the year, which number does not include complaints concerning the non-payment of wages. Every complaint was investigated, and orders were issued to correct conditions, when necessary. Each person, who entered a complaint and gave his or her name and address, was advised of the result of the investigation. When complaints received related to conditions not within the scope of the department, but to matters under the control of some other state or city department, they were forwarded to such department. Complaints as to non-payment of wages law numbered 1,771, and the amount paid to the employees, as a result of the action of the department, was \$35,792.56, an increase from \$28,704.63 for the previous year. These claims are mostly for small amounts due employees, who cannot afford to lose the wages due or to take civil action to collect them.

Accidents in Industry. The enforcement of the labor laws and the rules and regulations of the department for the protection of the workers is a very important function of the department. This work is accomplished through the Division of Industrial Safety. An examination of

the report of that division will show how great a portion of the department's time and effort have been expended in its endeavor to carry out the principle purpose of the labor laws,—the protection of the welfare and safety of the workers in industry. The total number of injuries of every nature, including occupational diseases, reported to the Department of Industrial Accidents for the year ending June 30, 1927 was 168,057. The tabulatable injuries (defined as those causing loss of time exceeding in duration the remainder of the day or shift on which the injury occurred) numbered 64,162, exceeding by 5,700 the number reported during the previous year. The tabulatable injuries are classified as follows: Fatal, 314; permanent total, 20; permanent partial, 1,229; temporary total, 62,599.

Employment. Another important feature of the work of the department is the obtaining of employment for the unemployed. This is carried on principally through the four public employment offices, two of which are located in Boston, one in Worcester and one in Springfield. The total number of persons reported as being placed through the four offices was 29,434. Of this number 19,053 were males and 10,381 were females.

Veterans Placed in Positions. At the four public employment offices administered by this department, special attention is given to the placement of veterans. The records show that, during the last fiscal year, the number of positions reported filled by veterans was 3,121, constituting 16.4 per cent of the total number of positions furnished to male applicants for employment by the four offices.

Labor Troubles. During the year 1927 the number of strikes which occurred in Massachusetts was 63, and the number of employees directly or indirectly affected was 9,178, as compared with 65 strikes affecting 20,615 employees in 1926. The Board of Conciliation and Arbitration has kept in close touch with labor controversies and has been instrumental in settling strikes as well as in preventing their occurrence. The Board has heard and rendered decisions in 167 cases which were submitted to it by both sides for arbitration.

Manufacturing Industries. The census of manufactures in Massachusetts for the year, 1926, was taken during the past year. The results show that the total number of establishments in Massachusetts in operation in 1926 was 9,903, having a capital investment of \$2,819,189,700. The total value of products manufactured in these establishments during the year amounted to \$3,419,814,877, the value of stock and materials used in manufacture was \$1,790,611,294, and the difference between these amounts, \$1,629,203,583, represents the *value added* by the various manufacturing processes. The average number of wage-earners employed in the 9,903 establishments during the year was 602,343, and the total amount paid in wages was \$738,208,510. Notwithstanding a marked curtailment in the production of textiles, particularly cotton goods, there was only a fractional net loss, amounting to two-tenths of one per cent in the aggregate value of products manufactured during the year 1926, as compared with 1925, and there was an increase in the average number of wage-earners from 591,438 in 1925 to 602,343 in 1926, or nearly two per cent, while the increase in the amount disbursed in wages amounted to 1.3 per cent. The census for the year, 1927, is now being taken by this department in cooperation with the United States Bureau of the Census.

Retirement of Inspector Mary E. Halley

Miss Mary E. Halley was appointed a factory inspector in the department of the Massachusetts District Police on May 7, 1891 and was transferred to the State Board of Labor and Industries on October 16, 1913, under the provisions of section 8, chapter 726, acts of 1912. When the State Board of Labor and Industries was abolished and its work transferred to the Department of Labor and Industries in 1919, she was re-

tained in this capacity until the condition of her health made retirement necessary on April 4, 1927.

Miss Halley did pioneer work in the enforcement of labor laws to protect the health and well-being of employees in the industrial establishments of the commonwealth. Early in her career, she was appointed by a governor of Massachusetts to study the conditions of employment in the textile centers of England and France. This assignment was carried out in a highly satisfactory manner and won for her the commendation of many people deeply interested in the improvement of social conditions.

An intelligent and forceful woman and equipped with this experience, she carried on inspection work in the textile city of Lawrence, where she was well known and respected. She retired, after a useful service of thirty-six years, with the respect and appreciation of her associates in this department.

Appropriation. The total amount of the several appropriations for the use of the department during the year ending November 30, 1927, was \$356,695.00. The expenditures amounted to \$331,503.84, leaving an unexpended balance of \$25,191.16, in addition to which there was reserved for outstanding bills an amount estimated at \$1050. There has been collected in fees and paid into the treasury of the commonwealth through the Division of Standards the sum of \$89,016.39. If this amount were deducted from the total expenditures the net cost of the department to the commonwealth would be \$242,487.45.

E. LEROY SWEETSER,

Commissioner of Labor and Industries.

FINANCIAL STATEMENT FOR 1927

GENERAL

<i>Account</i>	<i>Appropriations</i>	<i>Expenditures</i>	<i>Unexpended Balance</i>
Officials	\$20,500 00	\$19,532 26	\$967 74
Personal services	262,495 00	247,675 74	14,819 26
Contingent and travel	71,200 00	64,113 52	7,086 48
Wage Boards	2,500 00	182 32	2,317 68
Totals	\$356,695 00	\$331,503 84	\$25,191 16

Collected in fees and paid into the treasury of the Commonwealth \$89,016 39

Collected in fees and paid into treasuries of cities, towns and counties of the Commonwealth 32,983 00

BY DIVISIONS

<i>Administration</i>	<i>1927 Appropriation</i>	<i>Expenditures</i>	<i>Unexpended Balance</i>
Commissioner, assistant commissioner, associate commissioners (personal services)	\$20,500 00	\$19,532 26	\$967 74
Clerical and other assistance to administration	4,200 00	4,200 00	-
<i>Division of Industrial Safety</i>			
Personal services	113,600 00	104,018 34	9,581 66
Expenses	28,300 00	27,578 98	721 02
<i>Board of Conciliation and Arbitration</i>			
Personal services	16,000 00	11,930 00	4,070 00
Expenses	4,700 00	3,040 86	1,659 14
<i>Division of Minimum Wage</i>			
Personal services	11,560 00	10,552 74	1,007 26
Expenses	3,300 00	2,549 07 ¹	750 93
<i>Wage Boards</i>			
Personal services and expenses	2,500 00	182 32	2,317 68
<i>Division of Standards</i>			
Personal services	27,000 00	26,870 00	130 00
Expenses	8,900 00	6,750 08	2,149 92
<i>Division of Statistics</i>			
Personal services	39,885 00	39,862 86	22 14
Expenses	11,500 00	9,845 18 ²	1,654 82
<i>Public Employment Offices</i>			
Personal services	50,250 00	50,241 80	8 20
Expenses	14,500 00	14,349 35	150 65
Totals	\$356,695 00	\$331,503 84	\$25,191 16

¹ Not including outstanding bills estimated at \$50.

² Not including outstanding bills estimated at \$1,000.

REPORT OF THE DIVISION OF INDUSTRIAL SAFETY

JOHN P. MEADE, *Director*

INSPECTION WORK

The provisions of the labor laws of the commonwealth relating to safety, health and conditions of employment of wage-earners require a regular and thorough inspection of all manufacturing, mechanical and mercantile establishments, including buildings under construction. This is done by the Division of Industrial Safety, whose important functions include the following:

1. Securing compliance with the laws and regulations for the safeguarding of dangerous machinery and the control of other industrial hazards.

2. Investigation of industrial accidents and diseases of occupation to determine their cause and prevent similar occurrences to other employees.

3. Supervision of ventilation to prevent exposure of employees to the inhalation of poisonous fumes and irritant dusts.

4. Enforcing the statutes restricting the employment of women and children and investigating complaints of violations of the labor laws.

5. Inspection of building operations for the purpose of affording proper and adequate protection to workmen employed on scaffolding and work platforms.

6. Maintaining the rules and regulations for suitable toilet and washing facilities and adequate lighting in work places and enforcing the statutes requiring pure drinking water for employees and the provisions dealing with humidity in textile factories.

7. Enforcement of the laws providing that citizens shall be given preference in employment on public works, that the hours of labor shall be limited as provided therein and the prevailing rate of wages paid to mechanics in such employment.

Reports relative to the work of the division are made regularly to the commissioner and special matters as they arise are referred to him for attention and direction.

There was a total of 46,713 inspections and 12,133 reinspections made during the year. This total of inspections includes building operations inspections.

SUMMARY OF ACTIVITIES

	All Estab- lishments	Manufacturing Mechanical	Mercantile
Number inspected	42,283	18,416	23,867
Number of employees:			
Males			
14 to 16 years	8,339	6,430	1,909
16 to 21 "	54,776	45,865	8,911
Illiterate	2,259	2,220	39
Over 21 "	535,893	463,402	72,491
	601,267	517,917	83,350
Females			
14 to 16 years	7,463	7,129	334
16 to 21 "	68,471	57,047	11,424
Illiterate	2,340	2,336	4
Over 21 "	241,505	197,570	43,935
	319,779	264,082	55,697

The number of orders outstanding December 1, 1926, was 1,039, and the number of orders issued was 16,146, making a total of 17,185. The number of orders complied with was 15,786, while those outstanding on November 30, 1927, totaled 1,386, including 13 cancelled orders.

SUMMARY OF INSPECTIONS

The following statement indicates the activities of the inspection force for the year ending November 30, 1927:

Inspections .

Mercantile, 23,867; mechanical, 18,416; building operations, 4,430; Total, 46,713. Reinspections, 12,133.

Visits

Complaints, 3,149; accidents, 1,728; diseases of occupation, 306; home work in tenement houses, 409. Total, 5,592.

Orders Issued

Labor: Employment of women and minors, 450; posting time notices, 4,100; minors in prohibited trades, 75; procuring and returning certificates, 3,773. Total, 8,398.

Health: Sunday work, one day's rest in seven, 157; ventilation, humidity, dust removal, drinking water, core rooms, 273; lighting, injury to eyes, toilet and washing facilities, medical chest, 2,530; meal hours, seats, lockers, 78. Total, 3,038.

Safety: Communication with engine room, 21; safeguarding machinery, 2,152; miscellaneous, 132. Total, 2,305.

Building operations: Painting orders, 795; building orders, 1,577. Total, 2,372.

Miscellaneous: 815.

Totals: Orders issued, 16,928. Orders complied with, 15,786.

Complaints

Employed under 14 years of age, 19; employed without certificates, 20; employed in prohibited trades and on dangerous machinery, 18; illegal public exhibition of children, 5; health and sanitation (impure drinking water, failure to provide lockers, inadequate or no blower system), 111; time notices not posted, 4; at time other than stated, 1; overtime employment of women and minors, 411; public works, 20; non-payment of wages, 1,773; illegal advertising, 7; unguarded machinery, 4; building operations, 41; miscellaneous (fines, holiday employment, weavers' specifications), 31. Total complaints, 2,465.

INDUSTRIAL SAFETY

During the year, 2,108 orders having reference to safeguarding machinery were complied with by employers. Some of these related to power transmission equipment, sprockets and inrunning gears and set screws on revolving parts, and to failure to provide emergency stopping devices on each floor and the use of friction clutches, tight and loose pulleys and motor stops. Others related to belts and pulleys dangerously adjacent to passageways or working positions of operators, and those located over commonly used passageways or aiseways and to vertical and horizontal transmission clutches, couplings and collars, balance and flywheels, and projecting keys in shafting.

The protection of the eyesight, and of hands and fingers exposed at the point of operation was included in this work. Permanent partial disability injuries arise largely from such exposure and it constitutes a leading inspection problem in centers where the woodworking industries and metal trades predominate. The safeguarding of circular saws, planers,

jointers, matchers and moulders was stressed throughout the year. Power punch and drop forge machinery was inspected carefully, and the use of devices for the purpose of keeping the hands of the operator out of the danger zone was given special attention.

Many concerns operating these machines have co-operated with the department by installing the latest type of guards. Promoting the use of interlocking devices on extractors in laundries; securing better safeguards on calender rolls, embossing, hide-splitting and corrugated paper machinery; installing two-hand tripping devices on guillotine paper-cutters are phases of the work accomplished in controlling the operation of dangerous machinery.

Continual activity in this direction has brought about a gradual reduction in machinery accidents in recent years. Figures are given here indicating this fact for the years ending June 30, 1919 to June 30, 1926:

Machinery Accidents

	1919	1926
Injuries at point of operation	14,764	5,635
Accidents caused by belts	711	340
On gears	702	253
Set screws, keys and bolts	49	8
Counterweights	48	4
Cranks or eccentrics	23	11
Flywheels	20	17
All other	2,173	1,584
Totals	18,490	7,852

Reduction in the severity of injuries has also taken place within this period. In 1919, out of a total of 67,240 tabulatable accidents, 1,750, or 2.6%, included permanent partial disability injuries. In 1926, there were 59,488 tabulatable injuries, and 1158, or 1.94%, resulted in permanent partial disability. These included loss of fingers, thumbs, hands, toes, feet, limbs and the sight of eyes. Synchronizing with the reduction in tabulatable accidents, the severity rate in this group has been reduced also.

During the year inspectors of building operations did effective work in the enforcement of the revised rules and regulations pertaining to the painting business. In connection with safeguarding work on buildings under construction, 1,489 orders were complied with and many of these were issued by the inspector on the premises. They included orders relative to staging and other equipment used in the erection of structures such as equipment of scaffolding and working platforms with toeboards and guard rails; addition of safety devices to complete insulation in the transmission and use of electricity with dangerous voltage within buildings; safeguarding employees working below staging; protection around hoisting machinery and floor openings; regulation of smoke or fumes where artificial light is used, and the piping of salamanders so as to convey smoke and gaseous matters to the outside air. Systematic inspection was made of every building where this was possible and timed with the shifting of the working force on the job. Co-operation was maintained with many building contractors who manifested an active interest in protecting their employees against injuries.

Efforts were made by the inspectors to enforce the regulations providing for the safety of men employed in roofing operations. These provide that no work shall be done on a pitched roof unless a suitable staging has been placed in position for the use of workmen employed thereon, and it must be constructed and maintained for the purpose of protecting men from falling and also to prevent injuries which might be caused by materials falling from roof or staging. Roofing is one of the most hazardous employments in the building trades and injuries to employees so

engaged usually result in extended incapacity for work, with a high percentage of fatality. Repair work, such as mending a leaking roof, involving only a small area, is frequently done without adequate staging. The failure to provide staging in such cases often results in serious injuries to employees.

Difficulty was experienced in dealing with certain sub-contractors of limited means and experience who failed to provide for the safety of their workmen. In those cases where the employers failed to comply promptly with orders issued, prosecution was entered in the courts.

Supports used in the painting of buildings were inspected and when found to be unsafe for use by workmen, contractors were required to make them safe before using them again. The regulations provide that supporting devices be secured to some stable part of the building or structure and that they be fastened independently by a tie-line if attached to gutters. The proper spacing of falls, preventing the overcrowding of stagings, and furnishing lifeline and belts to men employed 50 feet or more above the ground were other provisions of the regulations which were promptly complied with. Interior built-up scaffolding, used in decorating ceilings and walls of churches, theatres and public buildings, in some cases failed to meet the requirements. Ledgers, diagonal stays, horizontal stays, planks and guard rails were changed by contractors when notified that they must conform with the regulations.

Office buildings, mercantile establishments, lodge rooms and other places where spray painting machinery was used were also inspected. The health regulations for the protection of men so employed require that proper ventilation be provided, and wet sandpaper be used on lead-painted surfaces, that respirators be furnished, and facilities for anointing exposed parts of the body with non-drying oil or cream during spraying operations be available. Serious health hazards in this work arise from the use of benzol, lead and silica, frequently causing benzol poisoning, lead poisoning and silicosis. Usually there was prompt compliance with the orders issued, but prosecution was necessary in a few cases. In one case a painting contractor appealed to a higher court, contending that he had complied with the rule that a tie-line be used in fastening the staging to a stable part of the structure, when he had placed ropes for this purpose on the premises. He failed, however, to attach the tie-line as required and the staging collapsed, resulting in the serious injury of a workman. The judge, in his charge to the jury at the trial, stated that the mere presence of rope on the premises was not sufficient to meet the requirements of the department; that it was the duty of the contractor to see that his employees complied with the rules and regulations of the department; and that the tie-line should have been in actual use with the staging equipment and installed as required in order to make the staging safe for the use of employees. The jury returned a verdict of guilty, supporting the attitude of the lower court. This case attracted the attention of master painters, contractors and employees throughout the state. During the year 599 contractors in the painting business were registered.

Attention was given to the employment of children exposed to the risk of injury by dangerous machinery, and 69 orders requiring compliance with the law for their protection were issued. In a few establishments children under sixteen years of age were found to be working on laundry machinery, or in proximity to circular or band saws, on stamping machines used in sheet metal and tinware, or near hazardous machinery or gearing while in motion. In a few cases children under eighteen years of age were found to be employed in the operation of motor vehicles. In most instances there was prompt compliance by employers with the orders issued in this connection.

Employment of Women and Minors

The laws relating to the hours of labor of women and minors were enforced systematically. Inspections were made in 42,283 manufacturing, mechanical and mercantile establishments, and 8,398 orders were issued, requiring the posting of time notices, the procuring and returning of certificates, prohibiting children in working at dangerous trades, and employment at time other than stated on the printed notice.

Posting of time notices continues to be an important feature of this work. In many of the modern well-equipped establishments these are preserved with much care and framed under glass in a substantial manner, but in the smaller places time notices are often found torn and unsuitable for use. Verbal orders were issued when such notices were not posted in each room with the hours of labor correctly stated, and these were usually complied with by the employer in the presence of the inspector. Assistance was given in explaining the law when necessary, and this work of the inspectors has proved effective in localities where language difficulties prevailed and resulted in better compliance with the law.

Night inspection work was carried on in dressmaking and garment workshops, box-making concerns, shoe factories, bakeries, restaurants, theatres, and in fur, candy, jewelry and other manufacturing establishments. Close attention was given to places where employees worked on a piece basis. During a single month, approximately one hundred of these establishments were inspected after the close of the ordinary working hours. Prosecution was necessary in some cases and substantial fines were imposed by the court. It was found that violation of the law was confined to only a small part of those employed, and there did not appear to be a general disregard of the statutes restricting hours of employment for women.

Systematic inspection work was undertaken in the larger hotels in which from two hundred to twelve hundred persons were employed. Much time was spent in these hotels in checking up the lists of shifts on file. This included interviewing each woman as to her hours of employment and confirming the time of employment as indicated in the posted notice. Such work was necessary in kitchens, laundries, restaurants and linen rooms of these hotels and included chambermaids, hair dressers and floor clerks. Employment managers were interviewed and were furnished information as to the requirements of the labor laws. Orders issued by the department were promptly complied with and a spirit of co-operation was manifested by employers.

Inspection of restaurants where young women were employed as cabaret dancers was another important part of the night inspection work. Girls under twenty-one years of age were found to be employed in singing and dancing after ten o'clock in the evening in several of these places. The department contended that this was illegal, basing its action on the case of the Commonwealth vs. Griffith—204 Mass. pages 18, 21—in which the word "work" is defined. The law provides that no person shall employ a boy under eighteen or a girl under twenty-one or permit such a boy or girl to work in, about or in connection with a mercantile establishment after ten o'clock in the evening. In some restaurants it was found that it was the practice of contractors to bring these girls in to furnish such amusement. The department immediately instituted court proceedings in a test case, and the employer was found guilty. Appeals were subsequently entered and the case was finally adjudicated by the Massachusetts Supreme Court. The decision rendered upheld the contention of the department, and was as follows:

Commonwealth vs. Wallace Y. Hong

SANDERSON, J. The defendant was found guilty on three counts of a complaint charging him with carrying on a certain mercantile estab-

lishment, and employing such girls to work in connection with the establishment after 10 o'clock in the evening.

The case was submitted to the jury upon an agreed statement of facts, from which it appeared that the defendant is a member of a partnership conducting an American-Chinese restaurant in Boston, duly licensed to conduct a restaurant and to give entertainments in connection therewith; that he engaged one Sleeper, under contract, to furnish an entertainment; that the girls named in the different counts of the complaint appeared in the defendant's premises and participated in an exhibition of singing and dancing which began at 7 p. m. and continued for about twenty or twenty-five minutes and then again at about 10:30 p. m. and continued for about twenty or twenty-five minutes; that these girls are over fifteen and under twenty-one years of age; that they were under contract with Sleeper and paid by him and that he was present at the time the entertainment was given and supervised and directed it. The defendant excepted to the refusal of the trial judge to direct the jury to return a verdict of not guilty.

The statute in question, G.L. c. 149, sec. 66, forbids the employment of a girl under twenty-one years of age or permitting her to work in, about, or in connection with any establishment or occupation named in sec. 60 of that chapter before 5 o'clock in the morning or after 10 o'clock in the evening. Among the establishments designated in sec. 60 of chapter 149 are "mercantile establishment (s)."

The words "mercantile establishment" as used in that chapter include "any premises used for a restaurant or for publicly providing and serving meals." G.L. c. 149, sec. 1.

The finding could have been made that the defendant permitted the girls named to participate in the exhibitions. The fact that the performers were employed by an independent contractor is not a defence. The offence was committed if the defendant permitted them to work in his establishment within the prohibited time. The participation by the girls in an exhibition of singing and dancing could be found to be work within the meaning of that word as used in the statute. In *Commonwealth v. Griffith*, 204 Mass., 18, 21, the court, in deciding that the word work as used in the statute should be given a broad meaning and that it included the employment of children to take part in theatrical exhibitions, said: "The statute was intended to protect children from employment calling for constant attention, regular effort and physical or mental strain, to accomplish the desired result." See also *Berdos v. Tremont & Suffolk Mills*, 209 Mass., 489, 492. Upon the agreed facts the jury could have found that the defendant permitted minors to work in his mercantile establishment in violation of the statute.

Exceptions overruled.

(See advance sheets, page 2011, of the opinions of the Massachusetts Supreme Court, November, 1927.)

This decision accomplished much for a better enforcement of the law in connection with the employment of young women in these places. Inspectors found that general compliance with the statute followed quickly upon this decision by the court.

Inspection of seashore establishments was continued during the summer. Beginning early in the season, effort was directed toward the prevention of overtime employment. Numerous violations of the law limiting the hours of labor were found. Women, recruited from employment agencies throughout the state, were brought to these places, many of whom had been in private domestic service and were anxious to obtain maximum earnings during the season, while their employers likewise desired to earn the greatest amount on their investment. Frequent and regular inspection was necessary to prevent overtime employment in these places.

Lunch Period for Women and Children

The inspectors inquired as to the observance of the law relative to the lunch period prescribed for women and children employed in factories and workshops. In some places they found that women who came to their places of employment from other cities and towns worked only a part of the time allowed for the lunch period in order to leave early to catch trains or busses at the end of the day, and that others, working on piece rates, were employed during a part of the lunch period without approval of their employers. The twenty-five orders issued were promptly complied with.

Seats for Women and Children

With the approach of the holiday season, large mercantile establishments increased the number of women employed. In some department stores a sufficient number of suitable seats for these extra employees was not provided. In ten cases complaints were made to the department and these were promptly investigated. Compliance with the requirements of the law quickly followed. In manufacturing establishments inspection was made of seats furnished, and in some cases these were found to be unsuitable, and better chairs were required. This occurred principally in places where work could be done only in a sitting position. It was found necessary to issue forty-eight orders requiring suitable seats for women or children, and all of these orders were complied with.

Overtime Employment of Women

During the year 411 complaints were made to the department alleging overtime employment of women and minors. Investigation was made in each case, and in 210 cases there was found to be a violation of the statute. Usually it was a case of employment at a time other than that posted on the printed notice. Such violation occurred in establishments where men and women were employed and paid wages on the piece rate basis. Women employees arriving late for work in the morning were allowed to work after the hours posted. Overtime employment of women did not appear to prevail among large numbers of women at any time. Key workers were permitted to work overtime in order to maintain the full volume of production. Prosecution was undertaken when circumstances justified such action.

Child Labor

Efforts were made to secure compliance with child labor laws, and the employment of children in factories, workshops, manufacturing, mechanical and other industrial establishments was regularly supervised. Employment certificates were examined, and work done by children was investigated in order to determine whether or not their employment was in accordance with the provisions of law. This occurred especially in plants where machinery was used, such as—laundries, bakeries and wood-working establishments, where children might be employed in proximity to manglers, ironers, dough-mixing machinery, circular or band saws, wood shapers, wood jointers or other dangerous machinery, unguarded belts, machinery, or gearing. During the year 52 orders for the protection of employed children under the age of sixteen years were complied with. Hours of labor on posted notices were checked up. Proprietors readily complied with the requirements that the employment of children cease immediately when notified by school superintendents of non-attendance at continuation schools. Because of frequent managerial changes in the chain stores, special attention was given to the employment of children in such places.

Supervising child employment during the summer months at beaches and amusement parks was continued and resulted in a clearer knowledge of the law by those engaged in business at these places.

The number of orders relative to procuring and returning certificates issued during the year was 3,773. Failure to have on file educational certificates for employed minors between sixteen and twenty-one years of age made it necessary to send 3,054 orders to places where these minors were employed. Very few of the minors were illiterates. There were 682 orders issued and complied with directing employers to secure or return employment certificates or to post the names and ages of children under sixteen years of age conspicuously near the principal entrance to the building in which they were employed. Nearly all of these orders concerned children who were employed part time and who continued to attend the regular school sessions. Approximately 9,000 children are certificated for part time employment each year to work during certain hours when the schools are not in session. These children are employed principally in chain stores, theatres and private bowling alleys for a few hours during the late afternoon. Such part time employment requires close supervision. Inspectors visited these places on Saturday evenings and at other times. In some cases they found that the law was being violated, and where necessary, prosecution followed. It was found that in some localities school authorities refused to issue certificates to minors until those previously issued were returned to the superintendent of schools. This placed the responsibility of securing the return of certificates upon the minor in many instances and was discontinued when the department brought the matter to the attention of the school authorities.

The employment of children early in the morning by milk wagon drivers in the delivery of milk was investigated by the inspectors who worked in groups covering the urban districts throughout the state. Police departments in cities and towns co-operated in this work and patrolmen reported the names of children found to be illegally employed in this manner. By these means much has been accomplished in preventing one of the most harmful types of child labor. Complaints of such violations of law were very few during the year. Agencies interested in the welfare of children including school superintendents, attendance officers and directors of continuation schools, rendered much assistance to the department in this phase of its work.

INDUSTRIAL HEALTH

The protecting of the health of employees is an important part of the work of factory inspection, and an endeavor has been made to secure adequate ventilation of workrooms where dust, gas and fumes exist. Orders were issued requiring improved exhaust equipment at the point of origin. Frequent tests of blower systems were made in plants where elaborate installations were necessary to deal with hazards of inhalation. The use of industrial poisons in factories and other places of employment was a subject of report by the inspectors.

During the year 3038 orders relative to insanitary conditions in factory and workshop were issued, and of this number, 1446 resulted in securing compliance with the rules and regulations for toilet and washing facilities. In tenant factory buildings frequent inspection was necessary. Many of these buildings in the city of Boston are of old construction, and the janitor is held responsible for maintaining and keeping the toilets clean. In some of these places, social clubs, church societies, trade unions and other types of organizations meet and many people in attendance during the evening are permitted to use the toilets. Special effort is therefore made to have floors scrubbed and washed and to maintain general cleanliness. Prosecution was necessary in some cases to enforce the requirements. In these buildings small concerns frequently embark in business ventures and furnish work to a few employees. Very little capital is invested, and efforts are made to restrict expenses to actual production cost; overhead charges are kept at the lowest possible minimum and practically no allowance is made for keeping the work-

shops clean. Frequent inspection is therefore necessary if sanitary conditions in such workshops are to be maintained. Many prosperous concerns now located in modern factory buildings began business under these circumstances. They now maintain a higher standard of compliance with the requirements for washing and toilet facilities, and there is greater co-operation between employers and employees. Wherever a competent person in the employ of the concern is charged with the responsibility of keeping the toilets clean, there is nearly always satisfactory compliance with the law. In places where poisonous compounds are prepared and where work done is especially dirty, inspectors make note of the washing facilities available. Clean, running hot and cold water is required as this is necessary to protect the health of employees in such establishments. The provision of pure drinking water for the use of employees is very important as a health measure, and the inspectors gave this matter their attention. In order to protect employees from danger in plants where dual water supplies are used, warning notices were posted in appropriate places.

Lighting

There were 275 orders issued requiring compliance with the provisions of the lighting code. Many of these were concerned with a proper maintenance of the equipment. Lamps were found with an accumulation of dust and dirt, which reduced the illumination intensity; others produced a glare in the ordinary field of vision or were not installed so as to secure a good distribution of light. Inadequate entrance and exit lighting was found in some establishments, and occasionally independent connection with the main service entrance for the building was not provided. Prompt compliance with orders issued by the department was obtained.

Regular inspection was made of plants in which employees were exposed to eye injuries, such as—foundries, stone-cutting establishments and plants using abrasive wheels. Mechanical devices were provided to protect workmen in such employment when required by the department. Twenty orders which were issued and complied with had reference to glass shields, helmet goggles and other means of preventing injuries from flying particles to welders, grinders, chippers, stone-blasters and stone-cutters.

First Aid Treatment

The total number of orders having reference to first aid treatment complied with during the year was 696. This branch of work included the inspection of rooms, required in plants where one hundred or more persons were employed, for the treatment of persons injured or taken ill upon the premises. In some places negligence was evident in the failure to furnish equipment required, such as—basins, individual toilets, blankets and suitable chairs, and hot water. Proper record of all cases of accident and sickness treated at the first aid room was not always on file.

If a person other than a qualified nurse was employed in giving first aid treatment, employers were required to furnish certification from medical authorities that such person was competent to do so. Assistance was rendered many concerns in the selection of the proper location for a first aid room. This was helpful in assuring a maximum of quiet and privacy for those needing such treatment.

Medical chests in small workshops were inspected and many of these were found to require replenishing. Compliance with orders issued by the department quickly followed.

Infection injuries continue to be a frequent cause of incapacity and permanent disability. The accident experience for 1926 shows a total of 5,494 cases in which infection developed, constituting 9.2% of the total tabulatable injuries for 1926. Of this number, 27 proved fatal, and 84 resulted in dismemberment or loss of use of fingers and hands. There was an increase of 473 cases over 1925. Failure by employees to promptly

report slight abrasions, punctures and lacerations contributes largely toward this record. Inspectors brought these facts to the attention of safety committees in the industrial plants.

Ventilation

It was necessary to issue 202 orders in plants where ventilation was not adequate in workrooms. This was done not only to improve general ventilation but also to provide for more complete removal at the point of origin of dust, fumes and gases. These were promptly complied with. Through this work protection was afforded employees exposed to the hazards of inhaling irritant and toxic substances. General ventilation was improved in workrooms where steam and other vapors caused discomfort. Employees benefitted by the orders issued included operators of linotype and monotype machines in printing establishments, persons employed in tending lead furnaces, in garages, shoe factories, foundries, woodworking establishments, and compounding rooms in rubber mills, electro-platers, stove enamellers, metal polishers, tenders of hardening and tempering furnaces. Other places of employment where this work was done included bakeries, laundries, celluloid rooms in wood heel establishments, manufacture of storage batteries, handling of ethyl gasoline, mills engaged in the manufacture of asbestos fabric and brake linings, hotel kitchens and dyeing and cleansing establishments. Advice was given by inspectors as to proper installation and their suggestions were readily acted upon. Special inspection of blower systems and exhaust fans was made in the winter season when doors and windows were necessarily closed.

OCCUPATIONAL DISEASES

Of the 247 persons having occupational diseases whose cases were investigated, 25 were women and 222 were men, and five of these cases were fatal—one woman and four men.

The 247 cases investigated, classified by diseases and by industries in which they occurred, are as follows:

<i>Diseases</i>	<i>Cases</i>	<i>Diseases</i>	<i>Cases</i>
Industrial dermatitis	77	Industrial eczema	12
Lead poisoning	47	Tuberculosis	8
Acid, oil and fume poisoning	20	Anthrax	8
Chrome poisoning	18	Cyanide poisoning	4
Gas poisoning	16	Dust in lungs	2
Benzol poisoning	13	Other industrial poisoning	22
		Total	247

<i>Industries</i>	<i>Cases</i>	<i>Industries</i>	<i>Cases</i>
Mechanical	52	Woodworking establishments	10
Tanneries	51	Foundries	8
Metal trades	29	Rubber mills	7
Textile	22	Paper-making	2
Shoe manufacturing	20	Mercantile	1
Manufacturing chemicals	15	Miscellaneous	30
		Total	247

Lead Poisoning

Lead poisoning is usually of industrial origin and is therefore classified as an occupational disease. There is such a great variety of trade processes in which lead in some form is used that many industrial workers are exposed in some degree to this hazard.

There was a total of 47 cases of lead poisoning investigated, none of which was fatal. Industrial lead poisoning occurs most frequently among painters, particularly spray, dip and automobile painters. Others af-

fects are drillers, reamers and riveters on structural iron work; com-pounders, mixers and calender operators in the rubber industry; compositors, linotypers, monotypers and stereotypers in the printing trades; and plumbers, steamfitters, gasfitters, sheet metal workers, tinsmiths, electric cable splicers, brass moulders, lead glaziers and handlers of insecticides. In all of the cases reported to the department, the place of employment was inspected, in some of which running hot water was not provided; exhaust systems were found to be defective at the point of origin; and respirators, masks and other means to prevent the inhalation of poisonous fumes or dust were not provided. The diagnosis of lead poisoning was not always clearly established. Fifteen cases occurred in mechanical establishments, three in foundries, two in rubber mills, eight in the metal trades, three in chemical plants, one in the woodworking trade, one in a textile concern, and 14 in other places of employment. Physicians co-operated with the department by reporting cases coming under their observation.

Benzol Poisoning

In the manufacture of sanitary cans and rubber, in finishing of artificial leather, dry cleaning and in the use of paints and varnish, benzol is employed as a solvent and evaporates into the workroom, even when great care is taken to diminish exposure to the fumes by enclosing the process. An exhaust ventilation system applied at the point of origin is not always found to be effective.

In an exhaustive report made in 1926 by the Committee on Benzol of the chemical and rubber sections of the National Safety Council, the following statement was made:

"Even when effective systems of exhaust ventilation keep the concentration of benzol in the workroom air below 100 ppm, there is a substantial hazard involved."

Although general and local ventilation apparatus was found in plants where benzol was used, substitute solvents were recommended. These included toluol, zylol, naphtha and varnolene. Co-operation was secured in many of these places and the use of benzol was discontinued.

Thirteen cases of benzol poisoning were investigated, three of which were fatal. Classified by industries these were as follows: Leather finishing, 6; rubber manufacturing, 3; and shoe manufacturing, 4. Two men employed in leather-finishing died as a result of benzol poisoning during the month of February, 1927. Joint investigation of these cases was made by the Department of Public Health and the Department of Labor and Industries. The facts briefly stated were found to be as follows:

One of the men was forty years of age and had worked for about five months in the plant of a leather-finishing company. He applied to the leather a mixture containing lamp black and linseed oil, including at certain times an additional preparation containing butyl acetate, amyl acetate, benzol and butyl alcohol. These were mixed with the linseed oil and received at the plant in large galvanized iron barrels. Fifteen other men were employed at the same process and three of them complained of suffering from slight headache. In the plant, 235 men and 12 women were employed.

The second fatal case was that of a man, thirty-three years of age, who worked in a patent leather manufacturing plant. He was employed in applying a mixture of linseed oil and another preparation containing benzol. There were 48 men employed by this concern and no other record of industrial disease was found.

The so-called "dope" or preparation used in both places was supplied by the same manufacturer and found to contain 40% benzol. It included small quantities of acetone and butyl alcohol, and nitro-cellulose consti-

tuted the base. It was clearly demonstrated that these men were exposed to benzol fumes. Substitute solvents were afterwards used and no case of industrial poisoning has since occurred in either of these establishments.

Two women employed in shoe factories, suffering from this occupational disease, were taken to the hospital, and one of them died. They worked at cementing rubber heels and leather bases, and had been so employed for a period of six months. Forty-eight rubber heels with the leather bases were laid on the bench in the middle of the room and there was an open pan of cement at the side of each of the employees. With a two-inch paint brush they applied this cement to the heel parts. Investigation proved that about 30 gallons of the cement were used each day in which a 5% solution of benzol was included and said to be especially adapted as an adhesive in attaching leather bases to the rubber heels. The employees worked about 10 feet from the cementing machine. The room was about 50 feet square and had ample general ventilation. There was constant exposure to the pungent fumes of this benzol cement. Its use was promptly discontinued after this experience.

Short periods of incapacity for work resulted in the other cases of benzol poisoning.

Carbon Monoxide Poisoning

Six of these cases were investigated, and all were male employees. Four were garage workers; one was an automobile chauffeur; and one was a coppersmith. Carbon monoxide gas is a source of great danger to health. Automobile repairing in workshops connected with garages gives employment to many mechanics who are exposed to the hazard. The testing of engines results in a discharge of this gas in the workroom, and an efficient exhaust equipment is necessary for the protection of the health of the employees.

A foreman of an automobile repair department became ill with carbon monoxide poisoning. He was employed in a small repair shop provided with ventilation by outside windows and a 24-inch exhaust blower to take the air from near the floor line and deliver it to the outside. This equipment was inadequate to control the fumes. Flexible tubing attached to the exhaust pipe of the automobile was the means by which this difficulty was overcome. Thorough ventilation was then maintained in this workshop.

In a repair shop located in a modern garage building, one of the employees was overcome by inhalation on three different occasions. Upon investigation it was found that adequate mechanical exhaust equipment with flexible tubing was not provided. These conditions were promptly changed and compliance made with requirements for ventilation.

Another case investigated was that of a coppersmith who worked over an open fire, heating the rim of a large cover made of copper. Coke was used for fuel, which threw heavy gas into a room with no local ventilation. Prompt compliance with statutes in this connection was made by the concern.

Brief period of incapacity for employment was the history in each of these cases.

Anthrax

Eight cases of this disease (all males) were reported and investigated. Seven cases occurred in tanneries and one in a textile mill. There were no fatal cases. Tanneries and workrooms where wool-sorting is done

were frequently inspected during the year. Devices to safeguard employees against this anthrax poisoning were required. Plant physicians are regular in their visits to the tanneries, and prompt treatment is given to employees for slight punctures or abrasions of the skin. The physical condition of employees in these places is carefully watched for symptoms favorable to anthrax infection. Nearly all of the cases reported were those of employees working in the beam house to which skins are brought from the rough stock room department where they are put into vats and removed at the proper time by the same employee. It is his duty to bring twenty or more wheelbarrow loads of these dry skins to the vats where they receive a perchloride of mercury or hydrochloric acid solution bath. Six of the seven cases reported from tanneries occurred to employees working under these circumstances. In each case the disease was diagnosed as anthrax poisoning, following the discovery of pimples upon the arm and neck.

The seventh case was that of a carpenter who was engaged with other workmen in building a room for a shower bath in the rough stock department. He had worked in this place for a week, when anthrax symptoms developed, and he was then placed under the care of the plant physician. After an injection of serum, he promptly recovered. In all these cases the period of incapacity for work was very brief.

Another case of anthrax poisoning was that of an employee who had been scouring wool in a textile mill. The wool, imported from South America, was being put through the sorting, blending and scouring processes. The room in which he worked was located on the first floor and the machines were connected with an exhaust system. The wool was taken from a basket and thrown on to a moving apron which fed it into the pickers and was then carried to the scouring machine by a moving conveyor belt. Anthrax infection was discovered on his right middle finger and the back of his right hand. The patient was taken to the hospital where he promptly recovered. Good toilet and washing facilities were provided, but no hot water was furnished in this establishment. Compliance with the health regulations was quickly secured. Competent medical supervision and treatment of employees is an important factor in preventing the spread of this occupational disease.

Industrial Dermatitis

Employees contract this disease through coming into contact with irritating agencies. The disease is most prevalent among those handling chemicals, drugs, and foreign species of wood; among tar and petroleum workers; bakers and confectioners; masons, bricklayers, plasterers, paperhangers; furniture polishers; printers and employees in type foundries; and dye and aniline workers. Substances which frequently cause dermatitis are copper dust and cocobolo wood dust; mineral, lubricating and cutting oils and various acids. Investigation of seventy-eight cases of dermatitis was made during the year. Classified by industries, they are as follows:

<i>Industries</i>	<i>Cases</i>	<i>Industries</i>	<i>Cases</i>
Tanning	19	Rubber manufacturing	4
Shoe manufacturing	14	Chemical manufacturing	3
Textile manufacturing	9	Paper manufacturing	2
Woodworking	6	Foundries	2
Metalworking	6	Mercantile establishment	1
Mechanical work	5	Miscellaneous	7
		Total	78

Inspection was made of the work places in each of these cases. Careless handling of acid and unnecessary exposure to oils was frequently found to be the cause of the disease. Better control of the materials used was

recommended and certain types of containers were suggested for this purpose. The use of rubber gloves was urged in some instances. Occasionally it was necessary to issue orders requiring the installation of running hot water and the replenishing of medical chests.

Chrome Poisoning

There were 18 cases of chrome poisoning investigated. These were all men. Of the 18 cases, 15 occurred in tanneries, two in the manufacture of chemicals, and one in a textile establishment. The handling of chrome-tanned skins was usually the cause of this disease. In other cases it was caused by contact with the liquid used in seasoning the hides, consisting of wax, pigments of clay, ammonia and formaldehyde, which was spread over the skins with a cloth swab. Rubber gloves are furnished employees for protection, but are not always used. Some cases are caused by the spattering of chrome solution on the forearms and wrists; others result from contact with a solution of chrome powder and oxalic acid used in tanning and coloring sheep skins. Contact with material in dye kettles containing aniline and chrome colors is another cause of this disease.

All of the establishments concerned with these cases were provided with hot and cold water and proper equipment for first aid treatment.

Miscellaneous

The miscellaneous group included 62 cases, classified by causes, as follows: acid, oil and fume poisoning, 20; gas poisoning, 16; cyanide poisoning, 4; other industrial poisons, 22. There were also 12 cases of industrial eczema, eight cases of tuberculosis, and two cases of dust in lungs. In all of these cases careful inspection was made and special attention was given to conditions in the work places and the application of laws dealing with industrial health.

EMPLOYMENT ON PUBLIC WORKS

The law restricts the employment of laborers, workmen and mechanics employed by the cities and towns of the commonwealth to not more than eight hours in one day and not more than forty-eight hours in a week, except in cases of extraordinary emergency, such as—danger to property, life, public safety and public health. Such persons employed by contractors and sub-contractors engaged for or upon any public works are subject to these restrictions. At the peak of the summer season there were approximately 3,000 laborers and mechanics employed daily in the building of public highways. During the year ending November 30, 1927, the Department of Public Works expended nearly \$15,000,000 for this purpose. Frequent inspections of such work were made during the season, and overtime work was discovered in some cases where it was held that there was danger to life and property. Conferences were held with contractors in order to determine whether or not overtime work was necessary and the facts were referred to the commissioner for his attention and decision.

Some of the contractors and sub-contractors failed to observe the statute requiring weekly payment of wages to employees until orders that they do so were issued by the department.

There were 26 complaints alleging violation of the statutes regulating employment on public works, including observance of the eight-hour law, preference to citizens in employment, and payment of customary and prevailing rate of wages to mechanics and teamsters.

Failure to give citizens preference in employment was alleged in 15 complaints. Several of the complainants alleged that heads of municipal departments failed to give preference in employment to citizens in the construction of public works. Investigation was made of each complaint

and a conference held with the proper officials, these resulting in prompt compliance with the statutes.

In one case the office was notified that men were employed as firemen in a city hospital on three eight-hour shifts, seven days a week, or a total of fifty-six hours a week. When the trustees were communicated with, prompt action was taken to restrict the hours of labor of these workmen to forty-eight.

WEEKLY PAYMENT LAW

During the year, 1,773 complaints were investigated by the department and the sum of \$35,792.56 was paid to employees after complaint was made by them at this office. This was the largest amount of money paid under these circumstances in any year in the history of the department. Small amounts of money predominated in the individual cases. Valuable service was rendered laborers and mechanics who were often without means to take civil action. In many instances this activity concerned the welfare of women and children in the home. Police departments, court officials, labor organizations and other groups continued to direct complainants to the department. Much time was spent by the members of the office staff in bringing about agreement between parties making conflicting claims.

ACCIDENT PREVENTION

Thorough factory inspection at frequent intervals is the most efficient means of preventing accidents. This includes not only keeping plant and operating hazards under control but also in stimulating interest in the exercise of due care among employees. Much progress has been made in this respect as a result of thorough investigation of accidents. In 1034 manufacturing, mechanical and mercantile establishments typical work injuries were investigated during the past year, and reports were made in each case describing in detail the contributing factors. When occasion required, exhaustive inquiry was made into machinery and plant conditions and whenever necessary, recommendations were made to the management with suggestions as to methods of preventing similar injuries. Employees were interviewed and urged to discontinue unsafe practices. Accident experience in the plant was made the basis for maintaining safe work places, rendering it possible to locate the danger zones in manufacturing plants and to give careful examination to dangerous machinery. The cleaning of machinery in motion continues to exact its toll, and lack of care on and about elevators still continues to be the cause of a number of fatal accidents. Through investigation of such accidents and the issuance of orders, conditions have been improved in this respect.

During the year the investigation of fatal accidents, permanently disabling injuries, occupational diseases and accidents to minors under eighteen years of age was continued. The places of employment were visited and the nature of the exposure was determined. Attention was given to certain types of accidents and the selection of those for special investigation was based largely on the experience recorded in Table 10 of the Annual Report of the Department of Industrial Accidents for the year ending June 30, 1926. These data were of valuable assistance in referring directly to employment places where expert inspection work would prove effective in reducing the accident frequency rate. Injuries due to preventable causes were made the subject of intensive inquiry. Many preventable injuries occurred in building construction work.

Volatile substances used for solvent purposes in the laying of flooring material commonly used in modern building construction were examined by the inspectors. Early in the year, an employee, who was engaged in spreading plastic flooring in a large hotel building approaching completion, was fatally burned as the result of an explosion of material used in the floor finishing, which contained a high percentage of gasoline. The

explosion occurred when an extension electric light fell to the floor and broke, and it was believed that either the heat of the filament or sparks from the breaking of the bulb ignited the highly concentrated fumes causing the explosion. It was found upon investigation that the employee was spreading plastic material on the floor in a small room to which a door without handles was hung. When the explosion occurred, the door slammed tight, making it difficult to open from the inside. The workman had apparently tried to grope his way out of the room as his finger marks were found on the charred wall. Ventilation in this room was possible by means of a window, but the window was closed at the time of the explosion. There is no record of any similar injury in the accident experience in Massachusetts, and upon communicating with the Bureau of Standards in the Department of Commerce at Washington, D. C., it was learned that they had no record whatever of explosions due to the use of plastic flooring material. Proper ventilation in such work places is the best preventative, and through ventilation the danger of vapors from the use of volatile and inflammable materials is reduced. During the year this matter was made a special object of inquiry by inspectors in every large building under construction, and contractors willingly co-operated in this work. Flooring was laid only when ready egress from every room was provided. Manufacturers of plastic flooring are endeavoring to procure a substitute for the dangerous solvents used in laying such material.

Occasionally injured workmen were found to be in the employ of small concerns who did not insure their employees under the Workman's Compensation Act. Some of these injuries caused prolonged incapacity for work and the employees' families suffered because of the loss of income. In making bids for building contracts some employers made little or no allowance for expenses necessary in the erection of suitable scaffolding, and it was found that some sub-contractors were accustomed to make no provision in their estimates for material for scaffolding, but to rely upon securing an adequate supply of lumber around the building to serve this purpose. The inspectors inquired into this matter and secured prompt compliance with their verbal orders whenever danger to workmen was imminent. Well established firms in the building construction line use only properly safeguarded scaffolding equipment, and their active co-operation is usually secured. Patented scaffold equipment, built for the special purpose of preventing work accidents, is commonly used and such equipment seldom collapses or causes injury to employees.

Tripping on unlighted or defective stairs and steps is the cause of many serious accidents due to falls in the building construction industry. In 1926, the accident records of Massachusetts included 1,147 lost time accidents of this nature, 11 of which proved fatal; two caused permanent total disability; and one permanent partial disability. Tripping results in more injuries of this type than any other cause. In dealing with this problem, a large number of orders was issued requiring that stairways be well lighted at all times during working hours. Difficulty was encountered in some buildings where electricity for lighting purposes is not used and where lanterns are used instead, and frequent inspection is therefore necessary to maintain proper illumination. Temporary treads on stairways and landings were inspected for the purpose of preventing the slipping of the treads or tripping on stairways. Two hundred and ninety-four accidents in the building trades were investigated. It is of interest to note that 4,430 inspections of buildings were made and 2,220 orders complied with, and that for the most part these inspections and orders related to the causes of accidents most frequently occurring.

Non-machinery Accidents and Their Prevention

The prevention of non-machinery accidents is not easily accomplished because the human equation and the failure of the individual employee to

exercise due care are involved. No mechanical devices to prevent such accidents can be devised. Improper handling of objects is the leading cause of industrial injuries in this state and falling is the next important cause. The preponderance of these accidents over machinery accidents is clearly indicated by the following data taken from Table 10 of the Annual Report of the Department of Industrial Accidents for the year ending June 30, 1926:

Percentage Distribution of Accidents, by Causes

CAUSES	Totals	Deaths	Permanent Total	Permanent Partial	Temporary Total
			Disability	Disability	Disability
			<i>Percentages</i>		
Handling of objects	32.9	7.3	8.3+	14.3	33.4
Falls of persons	14.9	19.8	33.3+	2.9	15.1
Machinery	13.2	14.3	16.7	63.8	12.2
Stepping on or striking against objects	8.2	3.2	—	1.0	8.3
Hand tools	7.8	1.6	8.3+	7.9	7.9
Vehicles	6.7	27.4	—	4.0	6.6
Falling objects not handled by employee	5.4	4.5	—	1.8	5.5
Miscellaneous	4.9	3.2	—	2.9	5.0
Explosions, electricity, etc.	4.2	12.7	—	1.1	4.2
Occupational diseases	1.1	3.2	33.3+	—	1.1
Animals . . . . .	.7	2.8	—	.3	.7
Totals	100.0	100.0	100.0	100.0	100.0

Handling of objects. This group of causes includes such items as: objects dropped upon another person by a fellow worker; being caught between objects; injuries due to something falling from a load or pile of material; strain in handling (the cause of nearly all industrial hernia injuries); and violent contact with sharp or rough objects.

In investigating cases of this nature, inspectors called the attention of employers and employees to the need of exercising care in storing material, handling tools and keeping them in good repair, piling objects in trucks, moving objects about the workroom and avoiding certain unsafe practices. Efforts were made to prevent accidents due to falls. Many injuries due to falling were investigated and it was found that many of these accidents were preventable.

Falls to persons. Slipping on the floor is the cause of many injuries to employees which are painful and usually followed by a prolonged period of incapacity for work. Practical means of preventing such accidents were recommended by the inspectors and the co-operation of employers was secured in maintaining floor surfaces in safe condition. It was required that permanent passageways and gangways be of even surface, kept clear and in good repair and free from nails, tools or obstructions over which persons might stumble and fall. In places where floors are washed daily, firms were advised to post notices warning employees to exercise due care. Accidents of this nature continue to be numerous, although usually they are preventable. Many women suffer from such accidents. Drippings from humidifiers and oil-soaked spots beneath the ends of looms constitute serious hazards in the textile industry. Examples of such accidents are given herewith:

A woman operator, when slipping, reached out her right hand, which was caught between the gears of the main and crank drive shafts of a loom. She lost the first phalange of the third finger of her right hand and suffered a partial loss of the use of the second finger.

In passing between two washing machines in a print works, an operator slipped on a wet floor. The main aisles of the room in which he was employed were of brick and pitched to the side for drainage. The space between the machines and the runway was floored over with heavy planks which were continually wet from the splashing of

water. Falling on this slippery floor, the employee sustained an injury to his back which resulted in a prolonged period of incapacity. Boring two-inch holes through these planks improved the drainage and did much to make the work places safe. This was done at the suggestion of the inspector.

Passing around the end of a spinning frame, an operator fell to the floor which was saturated with oil, making the surface slippery. She sustained a serious injury to the lower part of her spine. It was suggested that washing the floor weekly with a solution of lye would prove effective in removing the oil from the floor surface. The firm complied with the suggestion at once, and the number of accidents due to falls of persons in the plant was reduced.

Another cause of serious injuries is the projection of nails above the floor. An employee who worked barefooted punctured his foot which quickly became infected and resulted in partial loss of its use.

Injuries to the back and head usually result from accidents caused by falls. In one case investigated, an employee fell upon a wet floor in an establishment where glue was manufactured and sustained a fractured skull.

An employee in a yarn mill slipped on a greasy spot in the floor and incurred an injury that impaired his hearing.

Such injuries were found to be quite common and the inspectors made special efforts to deal with them. Thorough examination of floor conditions is the first essential in preventing such accidents. There was a total of 8,842 accidents due to falls of persons during the last fiscal year. This constituted 14.9% of all tabulatable injuries. Of those due to falls 62 proved fatal. This was 19.8% of all the fatal injuries for the year. Thirty-four, or 2.9% of all such injuries for the same period, resulted in permanent partial disability. Of the total number of accidents due to falls, 2,556 were caused by slipping on the floor level, one of which proved fatal and nine resulted in permanent partial disability. These injuries are nearly all attributable to causes which can be eliminated. Inspectors brought these facts constantly to the attention of the safety committees and mechanics and engineers while inspecting industrial plants. In the course of their regular duties the inspectors examined the working places of operators and the floors, and required that conditions causing accidents be corrected. Unclean or littered floors and unsafe methods of storing, packing and placing materials were frequently discovered and the orders issued by the department were promptly complied with.

Safeguarding machinery. Many accident reports suggested the advisability of corresponding with manufacturers of machinery, urging that they make improvements in the devices for the protection of operators. This was done and a description of accident experience in each case was given. Special investigation was made by the chief inspector in each instance and methods were proposed for the control of operating dangers. Manufacturers of machinery co-operated willingly in this work. This was especially true in the case of power punch presses and paper cutting machines, circular saws and jointers, shearing machines in textile mills, and power saws used in the ice-cutting industry.

These manufacturers have experimented freely with new safeguards, resulting in improvements in this respect in some machines. The inspectors have co-operated with agencies for the promotion of accident prevention work by attending meetings of safety committees in the industrial plants of the state, by affiliating with local safety councils and

participating in campaigns to reduce the number and severity of accidents, and by furnishing valuable information concerning this work to superintendents, master mechanics, foreman and others having supervision of employees. The number of persons injured in manufacturing, mechanical and mercantile establishments and in building construction work whose cases were investigated was 1,328 of whom 1,131 were men and 197 were women. The establishments visited included 326 textile mills, 118 metal products establishments, 102 woodworking shops, 41 paper mills, 41 foundries, 39 tanneries, 30 rubber mills, 45 shoe factories, and 166 miscellaneous factories. There were 101 accidents investigated in mechanical establishments, including laundries, bleacheries, dyeing and cleansing plants, electric and gaslight companies, and print shops. Investigation was made of 18 cases of injuries in mercantile establishments and seven in the transportation companies.

Classified by nature of the injuries, those occurring in manufacturing, mechanical and mercantile establishments and transportation companies were as follows:—Fatal, 55; amputation or loss of use of member, 318 (including loss of fingers, hands and limbs); abrasions, bruises, cuts and lacerations, 382; burns, scalds and concussions, 39; dislocations, fractures, sprains and strains, 146; other injuries, 31. In the building trades 294 accidents (all to men) were investigated. The following is a classification by nature of injuries:—Fatal, 29; amputation and loss of use of member, 16; abrasions, bruises, cuts, lacerations, 97; burns, scalds, and concussions, 9; dislocations, fractures, sprains and strains, 126; other injuries, 17. In transportation seven accidents were investigated, all of which occurred on the premises of industrial establishments.

Eye injuries. Investigation was made in 63 cases of eye injury to 59 men and 4 women. Of these 63 cases, 60 occurred in manufacturing, mechanical and mercantile establishments, as follows:—Metal trades establishments, 15; textile mills, 13; foundries, 9; shoe factories, 5; woodworking establishments, 4; tanneries, 1; laundries, etc., 9; mercantile establishment, 1; miscellaneous, 3. The remaining three cases occurred in the building industry. The following is a classification of the 63 cases by nature of the injury:—Foreign body in eye, 19; total loss of sight, 14; burns and scalds, 9; irritation, 9; cuts and punctures, 8; and loss of one eye, 4. Prevention work of this nature was undertaken in each industrial center of the commonwealth, and the cause of each injury was investigated by an inspector. The information obtained was placed at the disposal of the safety committees in the plant visited, and by this means active interest in the prevention of eye injuries was maintained.

LICENSES FOR HOME WORK

During the year 347 licenses to do home work were granted. This made necessary 409 visits to rooms and apartments in tenement and dwelling houses where such work is done. Some of these places were not found to be in a clean condition and licenses were not issued until the necessary cleaning was done. There was no apparent increase during the year in the number of persons hiring, employing or contracting with others to do home work. Reports of employers in which the names of persons doing home work is given were filed regularly, as required by law. Firms engaged in this work have willingly co-operated with the department. Some make personal investigation of applicants before a license is requested and select with care the persons to do this work, thus excluding incompetent persons from their employ. Firms and contractors engaged in this business are familiar with the law relative to home work and the employment of women and children. Investigation was made in some cases to determine whether or not children are allowed to do home work, but no evidence of such employment of children was found.

INJURIES TO EMPLOYED CHILDREN

By direction of the commissioner, a study was made of the fatal and permanent disability injuries to children in the fourteen to eighteen year age group as reported to the Industrial Accident Department for the year ending June 30, 1926. This was the most recent information available on which to base a study of this kind. Nearly 500 temporary disability cases were investigated. Most of the injuries reported were slight and did not result in prolonged incapacity for work.

There was a total number of 2,580 injuries to children between fourteen and eighteen. These constituted 4.3% of all tabulatable injuries for the year. By ages of children these are classified as follows:

<i>Age</i>	<i>Number</i>	<i>Boys</i>	<i>Girls</i>
14 years	99	78	21
15 "	321	256	65
16 "	900	704	196
17 "	1260	970	290
Totals	2580	2008	572

Permanent partial injuries to minors under eighteen years of age are classified by sex and age of the minors, as follows:—

<i>Age</i>	<i>Number</i>	<i>Boys</i>	<i>Girls</i>
14 years	1	1	—
15 "	5	4	1
16 "	26	21	5
17 "	35	22	13
Totals	67	48	19

All of these accidents were investigated. No child under sixteen years of age was fatally injured during the year. Of the four fatal accidents to children under eighteen, three were sixteen and one seventeen years of age. Two of these fatal accidents were caused by elevators. These four cases are here briefly described:

In one, a boy seventeen years of age attended high school and worked a few hours each day in the shipping department of a large mercantile establishment. He was backing up a hand truck to go on the elevator, and, when opening the gate, apparently did not see that the elevator was not there and fell three stories to the bottom of the well.

A boy sixteen years of age was employed in the cutting room of a shoe factory, and, while operating the elevator, was crushed to death in some unknown manner and his body found in the pit.

Riding in an ambulance in the course of his employment as a transfer operator for a municipal hospital, another boy of the same age was struck by an automobile and sustained a fractured skull, which resulted in his death.

While trying to remove an obstruction that prevented the operation of a machine used in the making of horse shoes, a third boy of this age was struck on the head by an arm of the machine, causing fracture of the skull and death.

No violation of labor laws occurred in connection with these preventable, fatal injuries.

There was one case of permanent total disability in this age group. A girl nearly eighteen years of age, who was employed at separating cardboard stock which had been cut out on the die press, sustained an injury

which resulted in the loss of both hands and the left forearm. The press was operated by an automatically releasing friction clutch, controlled by a double hand-tripping device, and the stock was pushed out with a wooden instrument. Two men operated this machine, one feeding in the stock and the other starting the press. The stock was pushed through by the operator and it was the work of the injured employee to receive and arrange it upon the table. She had nothing whatever to do with the operation of the press, and in the course of her work she did not come within the hazard zone. When she recovered from the shock of the injury, she could not explain why she put her hands into the press nor could she remember what occurred just previous to the accident. This was one of the worst accidents which occurred during the year. There was no violation of any statute administered by the department.

Permanent partial disability injuries were incurred by six children under sixteen years of age, five of whom were boys. Two of these occurred while children were operating freight elevators. In one case, a boy of fifteen, who was regularly employed in a mercantile establishment in wrapping up meat products in paper for purchasers, was directed to perform certain other duties which required him to operate an elevator. In attempting to do this, his foot slipped and he was badly crushed against the landing. Amputation of the right leg five inches below the knee was necessary. A work certificate was on file, but the nature of his employment was not properly designated.

The other case was that of a boy fifteen years of age who, when carrying up cotton waste from the picker room to the spinning room on an elevator in a cotton mill, caught his left foot between the elevator and the floor beams, resulting in a compound fracture of the great toe and causing loss of its use. He was certificated for employment as a sweeper, and the overseer claimed that the boy operated the elevator without his knowledge or consent.

Another accident of this type occurred to a boy just under sixteen years of age who worked during the school vacation in a textile mill. His father, who was the boss carder, took the boy in to assist him. In attempting to take off some waste from the machinery, the boy had the fingers of his left hand caught between the main cylinder and the feed roll, resulting in painfully lacerating them. Amputation of one phalange was necessary.

In operating a core machine, a boy, fourteen years of age, stuck his right hand underneath the guard attached to the chain drive and it was caught between the sprocket wheel and chain, rendering necessary a traumatic amputation of the first phalange of the third finger of his right hand.

A boy, fifteen years of age, employed as a helper on a spreading machine in an establishment making rubber cloth, was required to sit in front of the machine and keep the edge of the cloth from wrinkling after it was coated. Some rope was attached to the small shafting protruding from the machine and located a few feet away from the working position of the boy. He was trying to unwind this rope from the shafting and got his finger caught in the rope, lacerating it so badly that it was necessary to amputate the index finger of the right hand.

A girl injured, just under sixteen years of age, worked in a tailor's trimming establishment and was employed at folding covers. She was operating a machine used for attaching buttons and had her finger crushed in the mechanism. Amputation of the first phalange of the left index finger was necessary.

These six cases are classified by employment as follows:—

Textile mills	3
Foundry	1
Rubber cloth mfg.	1
Mercantile estab.	1

There were 61 permanent partial disability injuries to children sixteen and seventeen years of age. Forty-three were boys and eighteen were girls. Classified by industries, these accidents were as follows:—

<i>Industry</i>	<i>Cases</i>	<i>Industry</i>	<i>Cases</i>
Textile	12	Mercantile	2
Metal	11	Printing	2
Paper	9	Rubber	1
Woodworking and lumber	7	Granite	1
Electrical	5	Foundry	1
Shoe and leather	4	Miscellaneous	3
Mechanical	3		
		Total	61

Classified by the nature of injury, these cases were as follows:—

<i>Nature of injury</i>	<i>Cases</i>
Amputations:—	
One or more phalanges of finger	34
One finger	7
One phalange of thumb	3
Thumb	2
Arm above elbow	1
Left forearm and hand, and right hand	1
One hand	1
Two fingers	1
Two or more toes	2
Total	52
Loss of use:—	
One hand	1
One phalange of finger	2
One finger	1
Two phalanges of finger	1
Total	5
Eye injuries:—	
Loss of eye	2
Loss of vision of one eye	2
Total	4
Total	61

Analysis of injuries to children under eighteen showed that 30 of them resulted in permanent partial disability to index finger or thumb. In 23 cases, exposure of these parts to hazards at the point of operation was necessary in the course of the work done. In 14 cases incidents in the course of employment destroyed poise and balance between the mind and hand. Such incidents included the snatching of waste from inrunning gears; removal of pieces of material obstructing conveying machinery; adjustment of leather, paper, cardboard or metal ware to the machine process; and attempts to retrieve paper from slipping in a printing press. Cleaning machinery while in motion was the cause of two accidents. All of the permanent partial disability accidents in this age group were investigated and the establishments were inspected with special reference to the condition of machinery and the provisions for first aid treatment to persons injured or taken ill upon the premises. Nearly all of these accidents were found to be preventable. In very few cases did the em-

ployers fail to comply with the regulations prohibiting employment in dangerous trades or in the safeguarding of machinery.

LEGAL DEPARTMENT

During the fiscal year, 712 cases were prosecuted by the department. In 568 of these cases the department secured conviction; 97 cases were dismissed when wages were paid to employees; in 29 cases the defendant was found not guilty; 16 cases were placed on file on pleas of nolo; and two cases were nol prossed.

A tabulation of the cases follows:

Total number of <i>prosecutions</i>	712
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OUTCOME:

Guilty	568
Nol pros	2
Nolo	16
Dismissed	97
Not guilty	29
Total	712

CHARACTER OF OFFENCE:

Minors:

Employed under 14 years of age	12
Employed between 14 and 16	2
Employed without certificates	60
Employed in prohibited trades and on dangerous machinery	14
Illegal public exhibition	2
Health and sanitation	11
Time notices:	
Not posted	34
Working at time other than that posted	110
Overtime employment of women and minors	71
Non-payment of wages	379
Illegal advertising	3
Building operations	7
Labor, general (fines, holiday employment, weavers' specifications)	6
Prevailing rate of wages	1
Total	712

FINANCIAL STATEMENT

	1927	Unexpended	
	<i>Appropriation</i>	<i>Expenditures</i>	<i>Balance</i>
Personal services	\$113,600.00	\$104,018.34	\$9,581.66
Expenses and travel	28,300.00	27,578.98	721.02
Totals	\$141,900.00	\$131,597.32	\$10,302.68

REPORT OF THE BOARD OF CONCILIATION
AND ARBITRATION

EDWARD FISHER, *Chairman*, HERBERT P. WASGATT, SAMUEL ROSS

On December 1, 1926, there were pending 32 joint applications for arbitration. During the year 162 joint applications were filed, making a total of 194. Of these, 23 cases were settled, abandoned or withdrawn;

decisions were rendered in 167 cases (including one recommendation) and four applications are now pending. No petitions for certificates of normality were filed.

CONCILIATION.

The activities of the Board and its agent in this most important branch of its duties have resulted in establishing contact with representatives of both employers and employees in many lines of industry in the Commonwealth. It is gratifying to note that even where differences have arisen resulting in the cessation of work there has still been a willingness on the part of both the employer and the employees to consider their respective positions and differences seriously, patiently and in a broad and tolerant manner. The dogmatic attitude of insistence upon one's own viewpoint regardless of the consequences, quite common in the past when labor controversies arose between employer and employee, is more conspicuous by its absence as time goes on, the result being that in most instances either such differences are adjusted or resort is had to arbitration.

The policy of the Board, again personally and through its agent, to keep in communication with the industrial centers throughout the Commonwealth, has resulted not only in securing information and data of value in its work, but has afforded an opportunity of acquainting the parties with its procedure and the scope and extent of its duties and activities. In many instances service has been rendered both to employer and employees, and the public as well, in matters where, strictly speaking, no labor controversy existed. Such personal contact gives a sound basis for the Board's rendering assistance to employer and employees in the event that controversies calling for its action and services later arise. Such controversies as have arisen during the year resulting in cessation of work have not been of long duration, nor accompanied with the serious consequences of previous years. The following are typical of the Board's activities.

Cigarmakers, Boston. As appears in the last report, after conferences with the Board the differences between the employers and their employees in the cigar industry in Boston were finally adjusted and a working basis arrived at. Soon after the close of the year, it appearing that further differences had arisen, on December 23 the Board held a conference with the parties. The following firms were represented: H. Traiser & Co., Inc., Alles & Fisher, Inc., and the Silver Cigar Company. The employees, members of Local No. 97 of the Cigarmakers' International Union, were represented by a committee of seven. The first vice-president of the international union was also present. At this conference it appeared that prices for certain work had been increased under the so-called Montis award. This award not being acceptable to the employers, acting under the provisions of the constitution of the international union, they appealed therefrom to the international executive board, which board sustained their appeal. The representatives of Local No. 97, acting under a further provision of the constitution, then had the matter presented under referendum vote to the membership of the international union. The referendum vote sustained the original award. This led to a controversy between the parties concerning the award and its legality. After some discussion it appeared that the parties themselves, in order to adjust the differences, were prepared to submit certain issues to the Board for determination. The representatives of the employees stated that under the vote of their local they were authorized to submit only the question of prices to be paid for work. The employers desired to have other matters included and also a provision made for arbitrating such future differences, if any, as might arise during the year. It was finally agreed that the conference should adjourn until the next day, at which time the employers would submit their proposition in writing. At the adjourned meeting the employers submitted their offer in writing, which,

together with other issues, was discussed and finally at the suggestion of the Board the proposition made by the employers was modified. It was then submitted in the following form:

"The manufacturers agree to resume operating their factories in the usual manner after the holiday period with the present bill of prices, except as to new methods, so called, for one year from January 1, 1927, on the following terms and conditions:

"A. The price to be paid for the new-method work which is now in dispute shall be submitted to the Board of Conciliation and Arbitration for this Commonwealth for determination, the award of the Board to be effective during the remainder of the period above specified. Pending the award of the Board the prices being paid shall continue to be in effect.

"B. Any issues which may arise during the period above specified and which the parties are unable to adjust themselves relating to prices and working conditions for future new-method work which the manufacturers may inaugurate during this period, shall be submitted to the Board for its determination, the award to be effective for the remainder of the period.

"C. During this period there shall be no strike or lockout or cessation of work other than in the ordinary course of business.

"D. This proposition, if accepted by the employees, shall be approved by the executive board of the Cigarmakers' International Union."

The representatives of Local No. 97 stated it would be presented to the meeting of their organization to be held the following Monday evening and the conference was adjourned until Tuesday, December 28, awaiting the report of this committee. At the meeting on Tuesday the committee reported that the proposition submitted by the employers had been accepted and also presented other requests of the local which were discussed at some length. The proposition made by the employers, having been accepted by the employees and later approved (as therein provided) by the executive board of the international union, constituted the working agreement for the year ending December 31, 1927. Under the provisions of this agreement work has proceeded and such differences as have arisen which the parties could not adjust, either themselves or in conference with the Board, have been arbitrated, the awards appearing in this report.

Teamsters, Boston and vicinity. For several years the members of the Team Owners' Association of Boston and vicinity have had a working agreement with their employees, members of Local No. 25, International Brotherhood of Teamsters, Chauffeurs, Stablemen and Helpers. This agreement expired early in January, 1927, by reason of the employees having given notice that they desired a new agreement, under the terms of which they sought, among other things, an increase in wages and a reduction in the hours of employment. It appeared that another association of employers had been formed during the late fall, known as the Team and Truck Owners' Association of Boston. While the representatives of the employees had held conferences with representatives of both these associations they had not been able to settle upon all the terms for a new agreement. There had been, however, no interruption or cessation of employment during the progress of these negotiations, even after the expiration of the agreement. It appeared, however, that unless some adjustment was reached in the near future a serious labor controversy would be inevitable. The Board therefore, late in January, held a con-

ference with the representatives of the employees and decided to ask the representatives of the Team and Truck Owners' Association to enter into a conference with them in the presence of the Board, but learning that this Association was to hold a meeting on January 31, at which time the matters in dispute were to be considered, the Board deferred action awaiting the result of this meeting.

It appearing later that no adjustment was reached, on February 1 the Board addressed a communication to the committee of this Association, requesting them to confer with the Board on February 3. This request was not acceded to, and although renewed no conference was held. The Board then held a conference with representatives of the employees and of the Team Owners' Association. As a result of such conference the parties signed an application to arbitrate before this Board the terms of the new agreement, which they had not been able to adjust themselves. In the meantime the Board received notice from the Team and Truck Owners' Association that the Association had voted to have the differences with the employees arbitrated before a board to be established by the parties. It appeared through further correspondence that this Association desired the Board to take up with the employees the question of their naming a representative to such a board. This was done, but the representatives of the employees took the position that, as they had already signed an application to arbitrate their differences before this Board, they would not agree to arbitrate the same issues before another board.

The Board again sought a conference with representatives of the Team and Truck Owners' Association in order that there might be a full discussion of the issues and information might be given as to the result of the interview with the representatives of the employees. This conference was held on February 15, the Association being represented by a committee of four. The situation was gone over in detail and the committee stated that they would present the result of this conference to their Association for action and the Board would be notified thereof. On February 17 the Board received a communication from the secretary, stating that the Association still adhered to its former position of arbitrating the differences before a board established by the parties.

The Board then proceeded with the hearing on the arbitration application and on February 28 made its award. A new agreement was then executed between the members of the Team Owners' Association of Boston and their employees, which included the matters already agreed upon and those determined by the Board's award. The representatives of the employees then presented to the Team and Truck Owners' Association the question of their members signing a like agreement. The Board was later informed that conferences were held between representatives of this association and representatives of their employees, resulting in similar agreements being executed, thereby averting a serious labor controversy.

ARBITRATION.

The Board rendered decisions on 167 applications. In addition it has been called upon in some instances to apply its decisions to new conditions that have arisen and also to make rulings and recommendations relative to issues arising as the result of its decisions.

LIST OF INDUSTRIES AFFECTED AND PRINCIPAL DIFFERENCES IN CONCILIATION AND ARBITRATION CASES.

Conciliation.

Industries Affected: Building, Cigar, Coal, Express, Foundry, Poultry, Shoe, Stove, Tannery, Teaming, Textile, Transportation.

Principal Differences: Wages, working conditions, discharge.

<i>Industries Affected.</i>	<i>Arbitration.</i>	<i>Issues Arbitrated.</i>
Express		Wages, conditions
Cigar		Wages, conditions
Shoe		Wages, discharge
Teaming		Wages, conditions

FINANCIAL STATEMENT

	<i>1927</i>		
	<i>Appropriations</i>	<i>Expenditures</i>	<i>Balance</i>
Personal services	\$16,000.00	\$11,930.00	\$4,070.00
Expenses	4,700.00	3,040.86	1,659.14
	<hr/>	<hr/>	
Totals	\$20,700.00	\$14,970.86	\$5,729.14

REPORT OF THE MINIMUM WAGE COMMISSION

EDWARD FISHER, *Chairman*, HERBERT P. WASGATT, SAMUEL ROSS.
ETHEL M. JOHNSON, *Acting Director*.

OUTLINE OF FUNCTIONS.

The duties of the Minimum Wage Commission under the law comprise the following functions: investigating the wages of women employees in occupations when there is reason to believe that the wages of a substantial number are below the requirements of healthful living; establishing wage boards to recommend minimum rates of wages for women and minors; entering wage decrees based on the recommendations of the boards; inspecting to determine compliance with the decrees; and publishing the results of its findings.

An account of the work conducted during the year along these lines is given in the summary following.

SUMMARY OF WORK IN 1927

Inspections

Minimum Wage work during 1927 has been confined mainly to inspection to determine compliance with the wage decrees. This requires the major part of the time of the minimum wage staff as there are now decrees in effect in nineteen different occupations throughout the state.

Initial inspections were made under the two decrees that went into operation this year—the decree for jewelry, optical goods and related lines and that for toys, games and sporting goods and related lines. In addition partial inspections were made under the women's clothing, retail store, and office and other building cleaners decrees. The work under the last mentioned decrees is in progress at the close of the period covered by this report. Inspection on complaint was also made in several instances under other decrees.

In view of the requirements of the inspection work, no new wage studies were undertaken this year as a basis for future wage boards. Investigation as the result of complaints was made in the case of individual establishments engaged in the manufacture of rag rugs and curtains.

Wage Boards

Wage boards were authorized for two occupations where investigations had been made in previous years. These were for the electrical equipment and supplies and the boot and shoe cut stock and findings industries. The membership of these boards has not been completed. No boards have been in session during the year.

Publications

Minimum wage publications issued are the annual report and the leaflets giving the provisions of the statements and decrees. These include for the present year the reprint from the section of the annual report of the department dealing with minimum wage matters, and the statement and decree for the toys, games and sporting goods occupation.

Conferences and Hearings

A public hearing was held by the Commission on the determinations of the wage board for the toys, games and sporting goods occupation, December 30, 1926. Following this a decree for the occupation was entered effective March 1, 1927.

A number of individual conferences were held by the Commission and by the Assistant Commissioner with employers regarding the adjustment of cases of non-compliance in their establishments. The Assistant Com-

missioner has interviewed the candidates for the wage boards which are being organized and addressed a number of meetings to explain the minimum wage law and the work of the wage boards.

INSPECTION WORK

Inspections have been initiated or completed during the year under five wage decrees. These cover the following occupations: jewelry and related lines; toys, games and sporting goods; office cleaners; retail stores and women's clothing. With the exception of jewelry and toys and games, where complete initial inspections were made, the work represents a partial inspection only—completing or continuing inspections initiated the preceding year, or starting inspections that will be continued the following year. In addition to this work, inspection was made on complaint or in connection with other inspection work, in the case of one or more firms under the bread and bakery, brush, candy, corset, laundry, muslin underwear and paper box decrees.

In connection with this work 5258 establishment visits were made by the Commission's investigators. Wage records were secured for 22,217 women and girls in 2232 establishments. This is in addition to a large number of reinspection visits to establishments under the various decrees in the effort to adjust cases of non-compliance.

Women's Clothing and Office Building Cleaners

The inspection under the women's clothing decree was initiated the previous year. The work in both years represents a partial inspection confined mainly to the metropolitan district. That under the office and other building cleaners decree was started in the latter part of the present year and is still in progress. It is the third general inspection under the present decree.

Retail Stores

A complete inspection under the retail store decree, the second since the present decree became effective, was initiated in the latter part of the preceding year, and carried on during the present year. This work will be completed in 1928. The present inspection is more comprehensive than the preceding one which was confined to places of over 5,000 inhabitants. The major part of the field work for the year has been confined to this inspection. The work has been completed in metropolitan Boston and the eastern part of the state.

In Boston alone, wage records suitable for the tabulation of weekly rates were secured for 11,488 women and girls. The rates of these employees by occupations are given in Table 1. This presents the wage situation at the time of the inspection and does not show the adjustments following. The rates included are those for all women and girls regardless of age or experience. It should be noted that the minimum rates under the retail store decree vary according to the age and experience of the employee. These rates are \$10, \$12, and \$14 a week. In this connection the rates in effect are of interest. Less than two percent of the employees had rates below \$10 a week. Only one-tenth had rates below \$12 a week, and approximately one-fifth had rates below \$14 a week. Nearly two-thirds had rates of \$15 a week and over.

Jewelry and Related Lines

The decree for the jewelry occupation went into effect January 1, 1927. This provides a minimum rate of \$14.40 a week for experienced women over twenty years of age and \$12 a week for all others. The inspection was conducted during February and March. Wage records for tabulation were secured for 4307 women and girls in 131 establishments, more than one-third of whom were piece rate workers. Of the 2410 women on weekly rates, 23.5 percent at the time of inspection were scheduled to receive below \$14 a week. At the preliminary investigation 34.4 percent of the time rate workers in all the establishments included had rates below \$14 a week. A comparison of the rates of women in the same 35 establishments included in the investigation and the subsequent inspection shows at the investigation seven percent with rates below \$12 and 34 percent with rates below \$14; while at the inspection only 1.4 percent had rates below \$12 a week and 17.4 percent below \$14 a week. (Table 2)

There was compliance at the time of inspection in 4042 cases. In 102 establishments, representing 1534 employees, all necessary adjustments had been made prior to the inspection so that these establishments showed full compliance. There were found 265 cases of non-compliance in 28 establishments. The majority of these have been adjusted. There are pending at the close of the year, 125 cases in six establishments. These non-compliances are mainly in the optical goods branch and in the firms manufacturing the cheaper grades of jewelry.

TABLE II

*Comparison of Weekly Rates of Women Employed in the Same 35 Establishments Included in the Preliminary Investigation and in the *Subsequent Inspection Engaged in the Manufacture of Jewelry and Related Lines in Massachusetts. (Cumulative)*

(August 1923 through October, 1923 and February 1927 through March, 1927)

YEAR	NUMBER AND PER CENT OF WOMEN WITH RATES													Total
	Under \$9	Under \$10	Under \$11	Under \$12	Under \$13	Under \$14	Under \$15	Under \$16	Under \$17	Under \$18	Under \$19	Under \$20	\$20 and Over	
1923														
Number . . .	14	57	98	106	287	524	735	898	1,104	1,185	1,264	1,362	162	1,524
Per cent . . .	.9	3.7	6.4	6.9	18.8	34.4	48.2	58.9	72.4	77.8	82.9	89.4	10.6	100.
1927														
Number . . .	-	5	15	17	168	207	486	573	783	830	907	1,015	175	1,190
Per cent . . .	-	.4	1.3	1.4	14.1	17.4	40.8	48.2	58.0	65.8	76.2	85.3	14.7	100

* Decree effective January 1, 1927.

Toys, Games and Sporting Goods

The toys, games and sporting goods occupation decree went into effect March 1, 1927. It provides a minimum rate of \$13.50 a week for women 18 years of age and over with one year's experience in the occupation and special rates of \$10.50 and \$12 for inexperienced workers according to age. Inspection under this decree was started in March and completed in May. Wage records were secured for 1156 women and girls in 37 establishments. The majority of these women were piece workers, less than one-third being on time rates.

Of those for whom time rates were available, only 3.3 percent at the time of the inspection had rates below \$12 a week. There were 40.8 percent, however, with rates below \$14 a week indicating that a considerable number were receiving close to the minimum rate (\$13.50).

Comparison of the wage situation in the same firms at the preliminary

investigation prior to the establishment of a wage board with that found at the initial inspection after the entrance of the decree is given in Table 3. At the investigation, 20.5 percent of the women in all the establishments included had rates below \$12.00 a week and 50 percent below \$14 a week. The subsequent inspection showed only 3.3 percent of the women in all the establishments included with rates below \$12 a week; and 41 percent with rates below \$14 a week. The corresponding figures for the same ten firms included in the investigation and the inspection are as follows: At the investigation, 16.5 percent of the women had rates below \$12 a week; and 49.4 percent had rates below \$14 a week. At the inspection only 2.6 percent had rates below \$12 a week and 22.4 percent, below \$14 a week.

TABLE III.

*Comparison of Weekly Rates of Women Employed in the Same 10 Establishments Included in the Preliminary Investigation and in the
*Subsequent Inspection Engaged in the Manufacture of
Toys, Games and Sporting Goods. (Cumulative)
(May through July, 1924 and March through May, 1927)*

YEAR	NUMBER AND PER CENT OF WOMEN WITH RATES														Total
	Un- der \$9	Un- der \$10	Un- der \$11	Un- der \$12	Un- der \$13	Un- der \$14	Un- der \$15	Un- der \$16	Un- der \$17	Un- der \$18	Un- der \$19	Un- der \$20	\$20 and Over		
1924															
Number . . .	1	7	15	27	58	81	96	126	140	143	152	156	8	164	
Per cent . . .	.6	4.3	9.1	16.5	35.4	49.4	58.5	76.3	85.4	87.2	92.7	95.1	4.9	100.
1927															
Number . . .	—	—	—	5	28	43	82	94	128	135	153	164	28	192	
Per cent . . .	—	—	—	2.6	14.6	22.4	42.7	49.0	66.7	70.3	79.7	85.4	14.6	100.	

* Decree effective March 1, 1927.

Adjustments of non-compliances under the decrees are shown in Table 5 following the section on Enforcement. In 28 establishments, representing 804 cases, all necessary adjustments had been made prior to the inspection visit so that there was at that time full compliance. There were in all 1117 cases showing compliance at the time of inspection. There were 38 cases of non-compliance in nine establishments. Most of these have been adjusted so that there are only two cases outstanding in one establishment at the close of the year. These will probably be adjusted.

ENFORCEMENT OF WAGE DECREES

Disposition of Non-compliances, Pending from Previous Year

At the beginning of the fiscal year there were pending from the preceding year 1050 cases of non-compliances in 86 firms. The greater part of these were in 32 retail stores, in 30 laundries, and in 11 paper box factories. There were in addition a few cases in one or two firms under each of the following decrees: candy, canning and preserving, druggists' compounds, men's furnishings, millinery, office cleaners and women's clothing.

Nearly all of the cases were in firms previously advertised for non-compliance with the wage decrees. It was, therefore, possible to secure adjustment in only a small proportion of these. In 79 cases wages were raised or the employees, through change of work or method of payment, were able to earn the minimum. In 20 additional cases adjustment was reported. Three cases were recorded as special license type. There were 488 cases in 37 firms advertised during the year. The majority of these were in 25 laundries 17 of which had previously been advertised for non-compliance. The remaining cases covered by advertisement were in five

paper box factories, representing republication in each instance save one; in two candy factories, two druggists' compounds establishments; and one establishment under each of the following decrees: canning and preserving, men's furnishings and women's clothing. There are still pending 366 cases in 26 establishments, nearly all in retail stores where the second inspection since the entrance of the present decree, is in progress. An outline showing in detail the disposition of the cases left from 1926 under the new decree is given in Table 4.

Disposition of New Cases of Non-compliance

In connection with the reinspection made in attempting to adjust the cases of non-compliance pending from the preceding year, there were found 34 new cases of non-compliance in seven of the firms. Adjustment has been secured in ten of these cases, leaving at the end of the present year 24 cases in four firms. These are in addition to the 366 cases listed in Table 4 as pending from 1926.

TABLE IV
Disposition of Cases of Non-compliance Pending from 1926

(C — Cases; E — Establishments)

	CANDY		CANNING AND PRE-SERVING		DRUG-GISTS' COMPOUNDS		LAUNDRY		MEN'S FURNISHINGS		MILLINERY		OFFICE CLEANERS		PAPER BOX		RETAIL STORES		WOMEN'S CLOTHING		TOTAL	
	C.	E.	C.	E.	C.	E.	C.	E.	C.	E.	C.	E.	C.	E.	C.	E.	C.	E.	C.	E.	C.	E.
Pending from 1926*	10	2	6	1	15	3	445	30	1	1	3	3	2	2	87	11	473	32	8	1	1,050	86
ADJUSTMENT†																						
Wages raised	-	-	-	-	1	1	16	4	-	-	2	2	1	1	3	2	49	10	-	-	72	20
Left	-	-	-	-	-	-	37	3	-	-	-	-	-	-	-8	4	49	8	-	-	94	15
Special license or special license type	-	-	-	-	-	-	2	1	-	-	-	-	-	-	1	1	-	-	-	-	3	2
Earning minimum on piece work	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6	1	-	-	-	-	6	1
Adjustment reported	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	20	2	-	-	20	2
Change of work	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	-	-	1	1
ADVERTISED in 1927	10	2	6	1	14	2	380	25	1	1	-	-	-	-	69	5	354	23	8	1	488	37
PENDING	-	-	-	-	-	-	10	1	-	-	1	1	1	1	-	-	-	-	-	-	366	26

* Includes cases pending shown in Tables I and II of report of 1926.

† See Notes on Table 5 following.

Summary of Adjustments in Inspections for 1927

In the regular inspection work for the year, wage records were secured for 22,217 women and girls in 2232 establishments under 12 decrees. In 18,579 of these cases there was compliance with the decrees at the time of inspection. There were 1796 establishments, representing 9948 cases with full compliance at the first inspection visit. In 455 establishments, however, there were 3294 cases of non-compliance. The majority of these cases came in firms under the retail store decree where the inspection initiated in the fall of 1926 is still in progress.

Of the non-compliances, 905 in 284 establishments were disposed of before the close of the year. In 525 cases adjustment was made by raising wages, reducing hours, changing employees from time to piece work or transferring them to another kind of work where they could earn the minimum. In 97 additional cases in 35 establishments adjustment was reported or promised by the end of the fiscal year. There were 15 cases recorded as special license type or covered by the piece rate ruling. In 223 cases representing 68 establishments, the employees left. There were only two reported as discharged in one establishment. In five cases, representing four establishments, the firms went out of business during the year. There were 14 cases in a firm advertised in 1927.

There are pending at the close of the year 2389 cases in 202 establishments. The majority of these are in 186 retail stores, many of which have previously been advertised. Part of the remaining cases will probably be adjusted during the following year through the reinspections after the regular inspection has been completed. In connection with these cases under the retail store decree, it should be noted that the inspection has not been completed; also that the work this year represents the initial inspection in the case of establishments in the smaller towns.

A summary of the adjustments made during the year under the various decrees is given in Table 5 following.

TABLE V
Summary of Adjustments for Inspections in 1927 under Massachusetts Minimum Wage Decrees.

(C — Cases; E — Establishments)

DISPOSITION OF CASES	BREAD AND OTHER BAKERY PRODUCTS		BRUSH ¹		CANDY ¹		CORSET ¹		JEWELRY ²		LAUNDRY ¹		MUSLIN UNDERWEAR ¹	
	C.	E.	C.	E.	C.	E.	C.	E.	C.	E.	C.	E.	C.	E.
Records for tabulation and establishments represented	52	2	3	1	206	4	34	1	4,307	131	280	12	67	2
Compliance at inspection	52	2	2	1	97	4	31	1	4,042	131	260	12	60	2
Establishments with full compliance—cases	52	2	—	—	6	3	—	—	1,534	102	139	6	37	1
Cases non-compliance	—	—	1	1	103	1	3	1	265	28	20	4	7	1
ADJUSTMENT ⁴	—	—	1	1	22	1	—	—	140	28	19	3	6	1
Wages raised	—	—	1	1	—	—	—	—	48	19	5	2	5	1
Earning minimum on piece work	—	—	—	—	—	—	—	—	19	3	—	—	—	—
Hours reduced or change of work	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Adjustment promised ⁵	—	—	—	—	—	—	—	—	3	1	—	—	1	—
Covered by piece rate ruling ⁶	—	—	—	—	—	—	—	—	7	5	—	—	1	—
Special license, special license type, or similar case	—	—	—	—	—	—	—	—	2	2	—	—	—	—
Incorrectly recorded by inspector ⁷	—	—	—	—	22	1	—	—	59	8	—	—	—	—
Lefts	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Discharged	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Firm out of business	—	—	—	—	—	—	—	—	2	1	—	—	—	—
ADVERTISED IN 1927	—	—	—	—	—	—	—	—	—	—	—	—	—	—
PENDING	—	—	—	—	81	1	3	1	125	6	14	1	1	1

¹ Inspection on complaint or in connection with other inspection work.

² Initial inspection under decree.

³ Work initiated last year or in process at close of present year.

⁴ Does not include cases adjusted before agent's visit.*

⁵ Adjustment promised or reported by firms. Agent has not revisited.

⁶ Piece rate ruling:—Where great majority of employees on given process are making minimum or over, the rates are considered as conforming with the decree.

⁷ Includes one case not under decree.

⁸ Some of those reported as left were probably discharged. This information, however, was not given to the inspector.

* The majority of the cases are adjusted voluntarily on or before the date the decree becomes effective, so that many firms have full compliance at the inspection.

TABLE V (Concluded)
Summary of Adjustments for Inspections in 1927 under Massachusetts Minimum Wage Decrees.
 (C—Cases; E—Establishments)

DISPOSITION OF CASES	OFFICE CLEANERS ³		PAPER BOX ¹		RETAIL STORES ³		TOYS, GAMES AND SPORTING GOODS ²		WOMEN'S CLOTHING ³		TOTAL	
	C.	E.	C.	E.	C.	E.	C.	E.	C.	E.	C.	E.
Records for tabulation and establishments represented												
Compliance at inspection	1,912	274	109	4	13,815	1,713	1,156	37	276	51	22,217	2,232
Establishments with full compliance—cases	1,834	265	107	4	10,711	1,620	1,117	37	266	51	18,579	2,130
Cases non-compliance	1,900	267	83	3	5,144	1,335	804	28	219	48	9,948	1,706
ADJUSTMENT ⁴	78	14	2	1	2,767	392	36	9	10	3	3,204	455
Wages raised	32	9	2	1	637	229	36	8	10	3	1,005	284
Earning minimum on piece work	14	3	—	—	385	143	18	6	2	2	478	177
Hours reduced or change of work	—	—	—	—	—	—	3	1	—	—	22	4
Adjusted by piece rate ruling ⁶	6	2	—	—	19	17	—	—	—	—	23	19
Special license, special license type, or similar case	12	4	1	1	85	31	—	—	—	—	97	35
Incorrectly recorded by inspector ⁷	—	—	—	—	3	3	—	—	—	—	4	2
Left ⁸	—	—	—	—	20	13	—	—	2	2	11	9
Discharged	—	—	1	1	120	55	15	2	6	1	24	17
Firm out of business	—	—	—	—	2	1	—	—	—	—	223	68
ADVERTISED IN 1927	—	—	—	—	3	3	—	—	—	—	5	1
PENDING	46	5	—	—	2,130	186	2	1	—	—	14	4
											2,389	202

¹ Inspection on complaint or in connection with other inspection work.

² Initial inspection under decree.

³ Work initiated last year or in process at close of present year.

⁴ Does not include cases adjusted before agent's visit.*

⁵ Adjustment promised or reported by firms. Agent has not revisited.

⁶ Piece rate ruling.—Where great majority of employees on given process are making minimum or over, the rates are considered as conforming with the decree.

⁷ Includes one case not under decree.

⁸ Some of those reported as left were probably discharged. This information, however, was not given to the inspector.

* The majority of the cases are adjusted voluntarily on or before the date the decree becomes effective, so that many firms have full compliance at the inspection.

STATUS OF MINIMUM WAGE DECREES

Minimum Wage Decrees Established in Massachusetts Since Enactment of the Minimum Wage Law (Effective July 1, 1913) to January 1, 1928

OCCUPATIONS COVERED	Minimum Rate	Date Entered	Date Effective	Status
1. *Brush	\$0.155 hr.	June 29, 1914	Aug. 15, 1914	Obsolete
2. *Laundry	8.00	July 1, 1915	Sept. 1, 1915	"
3. *Retail Stores	8.50	Sept. 15, 1915	Jan. 1, 1916	"
4. *Women's Clothing	8.75	Sept. 28, 1916	Feb. 1, 1917	"
5. *Men's Clothing and Raincoats	9.00	Aug. 31, 1917	Jan. 1, 1918	"
6. *Men's Furnishings	9.00	Oct. 26, 1917	Feb. 1, 1918	"
7. *Muslin Underwear	9.00	July 1, 1918	Aug. 1, 1918	"
8. *Retail Millinery	10.00	July 1, 1918	Aug. 1, 1918	"
9. *Wholesale Millinery	11.00	Nov. 30, 1918	Jan. 1, 1919	"
10. *Office Cleaners . . . . .	.30 A M. .26 P.M.	Jan. 27, 1919	April 1, 1919	"
11. *Canning and Preserving	11.00	July 21, 1919	Sept. 1, 1919	"
12. *Candy	12.50	July 19, 1919	Jan. 1, 1920	"
(1) 13. **Corset	13.00	Dec. 27, 1919	Mar. 1, 1920	In effect
(2) 14. *Men's Clothing and Raincoats ¹ (revised)	15.00	Dec. 27, 1919	Feb. 1, 1920	"
(3) 15. **Knit Goods	13.75	Mar. 13, 1920	July 1, 1920	"
16. **Women's Clothing (revised)	15.25	May 6, 1920	July 1, 1920	Obsolete
17. **Paper Box	15.50	May 26, 1920	July 1, 1920	"
(4) 18. Office Cleaners (revised)	15.40	Dec. 30, 1920	Feb. 1, 1921	In effect
19. **Minor Confectionery	12.00	Oct. 4, 1921	Nov. 1, 1921	Obsolete
(5) 20. Paper Box (revised)	13.50	April 27, 1922	May 15, 1922	In effect
(6) 21. Women's Clothing (2d revised)	14.00	April 27, 1922	May 15, 1922	"
(7) 22. Muslin Underwear (revised)	13.75	April 27, 1922	June 1, 1922	"
(8) 23. **Men's Furnishings (revised)	13.75	April 27, 1922	June 1, 1922	"
(9) 24. Retail Stores (revised)	14.00	April 27, 1922	June 1, 1922	"
(10) 25. Laundry (revised)	13.50	May 19, 1922	July 1, 1922	"
(11) 26. Brush, ² (revised)	13.92	Jan. 25, 1923	Mar. 1, 1923	"
(12) 27. Druggists' Preparations and Proprietary Medicines	13.20	Sept. 27, 1923	Jan. 2, 1924	"
(13) 28. Canning and Preserving, Minor Confectionery and Food Preparations ³ (combined and revised)	13.00	Nov. 3, 1924	April 1, 1925	"
14) 29. Bread and Bakery Products	13.00	Feb. 17, 1925	May 1, 1925	"
(15) 30. Millinery ⁴ (combined and revised)	13.00	Mar. 24, 1925	July 1, 1925	"
(16) 31. Stationery Goods and Envelopes	13.75	Oct. 27, 1925	Jan. 1, 1926	"
(17) 32. Candy (revised)	13.00	Jan. 26, 1926	Mar. 1, 1926	"
(18) 33. Jewelry and Related Lines	14.40	Sept. 9, 1926	Jan. 1, 1927	"
(19) 34. Toys, Games and Sporting Goods	13.50	Jan. 1, 1927	Mar. 1, 1927	"

* Decree entered prior to consolidation of State Departments, December, 1919.

** Wage boards established or authorized, or arrangements for reconvening made prior to consolidation of Departments, December, 1919.

¹ The Men's Clothing and Raincoat Wage Board was reconvened in 1921 to revise the existing rates. The board recommended a minimum rate of \$14.75. This was not approved by the Commission.

² The Brush Wage Board was reconvened in 1921. This board recommended a minimum rate of \$14.40. This was not approved by the Commission. Another board was formed in 1922, which recommended a minimum rate of \$13.92. The present decree is based on this recommendation.

³ This board combines the work of the former Canning and Preserving Board and the Minor Confectionery and Food Preparations Wage Board.

⁴ This board combines the work of the former Retail Millinery Occupation Board and the Wholesale Millinery Occupation Board.

⁵ Figures in parentheses () refer to decrees now in effect.

Minimum Wage Decrees Entered or Made Effective During the Year

KIND OF WORK COVERED	WORKERS AFFECTED		Minimum Wage Rates	Qualifications.	DATE	
	Class	Age			Decree Entered	Decree Effective
Jewelry and related lines occupation	Experienced females of ordinary ability	20 or over	\$14.40 weekly	To be deemed experienced after reaching the age of twenty years and having had at least six months' experience in the occupation.	Sep. 9, 1926	Jan. 1, 1927
	All others	Any	\$12 weekly			
Toys, Games and Sporting Goods	Experienced females of ordinary ability	18 or over	\$13.50 weekly	To be deemed experienced after reaching the age of 18 years and having had at least one year's employment in the occupation.	Jan. 3, 1927	Mar. 1, 1927
	Learners and apprentices	16 or over	\$12.00 weekly			
	All others	Any	\$10.50 weekly			

FINANCIAL STATEMENT

For the Year Ending November 30, 1927, for the Division of Minimum Wage.

<i>Account</i>	<i>Appropriation</i>	<i>Expenditures</i>	<i>Un-expended Balance</i>
Personal Services	\$11,560.00	\$10,552.74	\$1,007.26
Contingent and Traveling Expenses	3,300.00	2,542.07*	757.93
Wage Boards, Salaries and Expenses	2,500.00	182.32	2,317.68
Total	\$17,360.00	\$13,277.13	\$4,082.87

REPORT OF THE DIVISION OF STANDARDS

FRANCIS MEREDITH, *Director of Standards.*

LEGISLATION ENACTED IN 1927.

Following is a synopsis of laws enacted during the annual session of the General Court relative to hawkers' and pedlers' licenses issued by the Director of Standards and to fees chargeable by sealers of weights and measures for testing and sealing vehicle tanks:—

Chapter 95, An Act Relative to the Sealing of Vehicle Tanks Used as Measures and Establishing Fees Therefor.—This act provides that when a vehicle tank used in the sale of liquid commodities by liquid measure has once been sealed, it shall not be necessary to seal it again while it remains in the same condition as when first sealed. It also provides for a sealing fee of one dollar for tanks having a capacity of one hundred gallons or less, and an additional fee of fifty cents for each additional one hundred gallons or fraction thereof. When a vehicle tank is subdivided into two or more compartments, each compartment is to be considered as a separate tank.

Chapter 119, An Act Establishing a Fee for the Transfer of Certain Hawkers' and Pedlers' Licenses.—This act provides that applications to the Director of Standards for transfer of hawkers' and pedlers' licenses must be accompanied by a fee of one dollar. In the past these transfers were made without the payment of any fee, although the expense involved for printing, clerical work and filing was fully equal to that incurred in the original issue of such licenses.

Chapter 185, An Act Further Regulating Certain Sales by Hawkers and Pedlers.—This act revises the list and reduces the number of articles which hawkers and pedlers may legally sell without license. In conformity with this Act pedlers are now required to be licensed by the Director of Standards under section 22, chapter 101, General Laws, in order to legally sell pamphlets, provisions, yeast, live animals except live poultry, brooms, hand tools used in making boots and shoes, and gas and electric fixtures and appliances. Previous to this amendment, the statute permitted the peddling of these articles without license although it was difficult to understand the reasons for such exemptions in many cases and to explain to the pedler of fish why he must be licensed, while the meat pedler was exempted, or to make the pedler of potatoes and other staple vegetables appreciate the necessity of a license in his case while one peddling bakery products could sell to the same customers in the same manner without license. The incongruity of the former statutory requirements and exemptions was further emphasized in the case of the pedler of gas and electric fixtures and appliances who was specifically exempted from license, although frequently having access to every room in the home of a prospective customer while licensed pedlers of other commodities almost invariably transacted business at the kitchen door.

*Not including outstanding bill estimated at \$50.

This act also amended section 23, chapter 101, so that hereafter a special county license may be issued only to the *manufacturer* of the article to be peddled. Employees of the manufacturer may only peddle under state or special city or town licenses issued by the Director of Standards under section 22.

NECESSITY OF MORE ADEQUATE TESTS OF HEAVY CAPACITY SCALES.

Although sealers of weights and measures are required by statute to test and seal heavy capacity scales used in determining weights of freight and for other commercial and industrial purposes these officials, however competent, have been unable to properly perform this duty because of the lack of necessary equipment. Since motor trucks have to a great extent superseded horse-drawn vehicles in the transportation of coal, materials used in building and road construction, and many other commodities the price or transportation charges of which are determined by weighing, scales with a weighing capacity more than double that of those formerly in use have been installed at various points throughout the state. Comparative tests made by weighing the same load upon several scales show a considerable variation due to the utter inadequacy of the tests made by the sealers whose equipment consists of 1,000 to 2,000 pounds of standard weights with which to detect error which might exist in scales having capacities of 40,000 to 300,000 pounds.

Scales of this type are of such importance to commerce and industry, and the effects of error may be so far-reaching, that the greatest possible accuracy is, in many cases, absolutely necessary. With this fact in mind, the Massachusetts Association of Sealers of Weights and Measures petitioned the General Court for the appointment of a joint special commission to investigate the subject (See House No. 518). The consensus of opinion in the Joint Committee on Rules, to whom the matter was referred, being that the Director of Standards already had sufficient statutory authority if necessary appropriation was available, the petitioners were given leave to withdraw at their own request. The budget estimates of this division for 1928 include an item of \$6000 for equipment which will make it possible to secure greater accuracy and uniformity in weighings made on scales of the type in question.

DIVISION PUBLICATIONS.

These publications were issued during the year:—

1. Report of the Director of Standards for the year ending Nov. 30, 1926.

2. Bulletin No. 24, August, 1927, containing new legislation, including amendments to the hawkers' and pedlers' license laws and the establishment of fees for sealing vehicle tanks. This number also included a revised list of weighing and measuring devices approved or disapproved by the Director of Standards under authority of chapter 72, acts of 1925, and units of measurement to be observed in the sale of wooden shingles in this commonwealth established by the director as required by section 29, chapter 98, General Laws, as amended by section 7, chapter 258, acts of 1924.

3. Legal Standard of Sizes for Anthracite Coal, established by the Director of Standards as required by chapter 382, acts of 1926.

4. Specifications and Tolerances for Liquid Measuring Devices (Revised to July 1, 1927).

CLINICAL THERMOMETERS.

Reference was made in the last report to a survey of clinical thermometers in drug-stores and institutions which was being made at that time with the co-operation of local sealers. As a result of that survey a considerable number of thermometers of doubtful accuracy were forwarded to this office for test. Many of these were the product of manufacturers

whose authority to use the seal had been revoked and the result of their tests furnished additional proof that these revocations were warranted. Several of the instruments tested were manufactured by a concern whose authority to seal had been temporarily suspended previous to the filing of the director's report for 1926, and these later tests were followed by a complete revocation of that authority. One other manufacturer surrendered his authority to seal his products, at the request of the director, when a large number of thermometers of his manufacture included in these tests were found to be inaccurate.

Under the heading "Laboratory Work" the details of clinical thermometer tests are given elsewhere in this report. In these tests the percentage of manufacturers' sealed thermometers passing a satisfactory test was 81.70, while 83.66 per cent of the unsealed instruments proved satisfactory. Taken without explanation these figures would show an apparent superiority of the unsealed thermometers although the sealed instruments are supposed to excel in workmanship and accuracy. Examination of the records of tests of unsealed thermometers shows that 2557, out of 4097 tested, were submitted directly by the manufacturers in connection with their applications for authority to seal their products. The records also show that 2442, or 95.5 per cent, of these were correct. The remaining 1540 unsealed thermometers obtained from other sources showed an efficiency of but 63.96 per cent, 555 of them failing to pass requirements, although much less rigid than those applied in the case of sealed thermometers.

During the past year three additional thermometer manufacturers have applied for authority to seal their products, one of whom has already qualified while the other applications are still pending. Clinical thermometers of foreign manufacture have evidently ceased to be a factor, the large percentage condemned in the past few years having apparently discouraged attempts to find a market for them in this state. Legislation regulating the manufacture and sale of clinical thermometers is under consideration in several other states and Michigan has enacted a law covering the subject during the past year.

LABORATORY WORK.

Calibration of Standards.

ARTICLE.	Tested.	Adjusted.	Sealed.	Con- demned.
Avoirdupois weights	772	473	771	1
Apothecary weights	15	—	15	—
Metric weights	20	—	20	—
Glass graduates	24	—	18	6
Liquid measures	4	—	2	2

Clinical Thermometers.

DESCRIPTION.	Tested.	Passed.	Rejected.	Per Cent Passed.
Massachusetts seal	3182	2600	582	81.70
Domestic unsealed	4095	3426	669	83.66
Foreign unsealed	2	1	1	50.00
Totals	7279	6027	1252	82.79

Total number submitted, 7349; broken when received, or before or during test, 70; Total number tested, 7279.

Cans, Cartons, and Other Containers, Measures, Scales, etc., Submitted in Connection with Manufacturers' Applications for Approval, or for Authority to Affix the Manufacturer's Seal Thereon.

ARTICLE.	Tested.	Accurate.	Inac- curate.
Cartons to be used in the sale by measure of ice cream, oysters, and other specified commodities	233	170	63
Coin operated vending machines	4	2	2
Glass graduates	31	—	31
Glass oil measures	7	3	4
Liquid measures (metal)	35	22	13
Liquid measures (fibre)	4	1	3
Milk jars (glass)	96	83	13
Milk jars (paper or fibre)	8	6	2
Canvas fuel baskets	10	3	7
Wire-fabric measuring device	1	1	—
Linear measures	3	—	3
Coin-operated weighing machines	4	2	2
Totals	436	293	143

Miscellaneous Tests.

ARTICLE.	Tested.	Accurate.	Inac- curate.
Automatic test-measures for gasoline pumps	57	56	1
Avoirdupois weights	3	3	—
Metric weights	1	1	—
Berry baskets	18	18	—
Liquid measures	3	3	—
Inside calipers	1	1	—
Totals	83	82	1

In addition to these tabulated tests, one dynamometer and one pair of loadometers were tested for the Department of Public Works; one safety-can for gasoline was tested and four metal weather-strips were gauged in assisting manufacturers to standardize their products; four bundles each of printed and unprinted newspaper were weighed to assist the management of a leading Boston newspaper to determine the amount and cost of ink used in editions of varying size; and measurements were made of the following commodities:—One gallon paint, four one-yard rolls of adhesive tape, four and one-half yards crepe de chine, three tumblers of preserves, and 66,975½ yards of sewing thread. Screen tests were also made on nine lots of coal, upon complaints, to determine whether the size in each case conformed with the standards established by the Director of Standards as required by chapter 382, acts of 1926.

Hub Odometers.

Under date of September 1, 1927, the Commissioner of Insurance approved a classification of risks and schedule of premium charges for motor vehicle insurance, effective on and after January 1, 1928. Included therein was a requirement that every policy written to cover one or more taxicabs on a mileage basis, unless specific authority is granted in writing by the Massachusetts Automobile Bureau permitting the issuance of each such policy without such provision, must contain a provision requiring each taxicab insured to be equipped with a measuring device other than a speedometer for measuring the mileage travelled by such taxicab, of a type which has been submitted to and approved by the Direc-

tor of Standards of the Commonwealth of Massachusetts, and which will not automatically reset before 100,000 miles and which has been sealed after attachment to the taxicab by the sealer of weights and measures of any city or town.

In coöperation with the Insurance Department, this division undertook an investigation of all mileage measuring devices on the market which ultimately led to the conclusion that the instruments known as "hub odometers" were the only devices which would meet the prescribed requirements. It was then necessary to make a comprehensive study of the design and construction of hub odometers submitted by different manufacturers, to determine by repeated tests the accuracy of their readings, and to establish tolerances or allowable limits of error to be observed by sealers of weights and measures in testing and sealing these devices after attachment to the taxicabs. The instruments submitted for final approval of the director included sixty-nine different gear combinations necessitated by the varying rolling circumferences of automobile tires used on taxicabs. The manufacturers have responded readily in changing gear ratios and in producing additional gear combinations suggested as a means for securing a greater degree of accuracy and will in the immediate future be in a position to supply all demands for approved hub odometers.

FIELD WORK OF INSPECTORS.

As in previous years considerable time and money was expended in the instruction and supervision of newly appointed sealers in towns of less than 10,000 inhabitants where sealers are not included in the classified civil service and are liable to be dropped at any time particularly when a change occurs in the personnel of the board of selectmen. During the past year new sealers were appointed in 41 towns and in three of these a further change was made when the new appointees resigned upon learning of the many duties and responsibilities which the office entails. This condition has obtained for many years and will doubtless continue until a more permanent tenure is assured to sealers in small towns.

Following is a synopsis of such phases of the inspectors' work in the field as may be gleaned from written records:—

Number of Inspections:—Stores, 1295; gasoline pumps, 229; pedlers, 664; transient vendors, 419; package reweighings, 109; coal reweighings, 76; net weight markings on food packages, 51; ice cream cartons (lots), 6; factories, 23; leather measurers examined, 49; complaints investigated, 38; prosecutions, 120.

Weighing and Measuring Devices.—Sealed, 7578; unsealed, 1175; total number inspected, 8753: Accurate, 1385; inaccurate, 143; total number tested, 1528.

Clinical Thermometers.—Sealed, 7574; unsealed, 932; total number inspected, 8506.

Reweighings.

COMMODITY.	Number.	Correct.	Under.	Over.
Miscellaneous packages	4526	1858	1386	1282
Coal (in bags)	292	79	48	165
Coal (loads)	41	2	14	25

State Institutions.

ARTICLE.	Number Tested.	Adjusted.	Sealed.	Con-demned.
Scales	81	12	77	4
Weights	281	26	277	4
Gasoline pumps	7	—	5	2
Loadometers	4	—	4	—
Totals	373	38	363	10

In addition to many general and indefinite complaints there were 38 specific complaints received and investigated. Nine of these complaints involved the size of anthracite coal and were found upon investigation to be unwarranted. Several of the other complaints led to prosecutions and are included elsewhere in this report under the appropriate heading.

During the year 44 applicants for certificates of fitness for appointment as measurers of leather were examined. Certificates were issued to 31 of these applicants, the other 13 failing to qualify.

PROSECUTIONS.

There were 120 complaints prosecuted by inspectors of this division, including 40 for peddling and 21 for conducting transient business without necessary license therefor. Conditional upon the defendants securing licenses, 18 of these cases were filed, dismissed, or continued for sentence. Other prosecutions were as follows:—Attempt to give insufficient weight, 21; giving insufficient weight, 8; giving insufficient measure, 1; possession of false scale, 5; possession of unsealed scale, 3; using scale not conforming to legal standards, 1; selling vegetables otherwise than by weight, 1; violation of law relative to weights of bread, 7; failure to mark quantity of contents on food package, 1; fraud and deceit, 1; furnishing goods to minor to peddle without license, 1; peddling under expired license, 1; failure to produce pedler's license for inspection, 1; not having license plates attached to vehicle used in peddling, 2; not having name on vehicle used in peddling, 1. Convictions were secured in 96 cases, while 19 pleaded *nolo contendere* and 5 were found not guilty. Fines totalling \$1267 were imposed and two cases were filed upon the defendants making restitution of \$5.60 and \$5.70, respectively.

OFFICE WORK.

Hearings were given to six firms and individuals charged with failure to mark quantity of contents upon packages containing food. Prosecution was ordered in one case where the defendant had disregarded previous warnings. The other complaints were filed upon agreement of the defendants to comply with the statute in future. Hearings were also given to 25 baking concerns for failure to mark loaves of other than standard weights in accordance with section 9, chapter 98, General Laws. Complaints were placed on file in 13 of these cases and the remaining 12 were prosecuted in court.

The sum of \$121,999.39 was received from all sources, including fees for hawkers' and pedlers' and transient vendors' licenses and for the testing of clinical thermometers. Cash to the amount of \$6000 was deposited, and surety bonds amounting to \$333,500 were filed with the director by applicants for transient vendors' licenses, to be subject to claims arising from business carried on under such licenses. The details of all receipts and expenditures are included in the financial statement which appears later in this report.

Three gasoline pumps, one gasoline meter and one oil tank truck were approved by the director under chapter 72, acts of 1925; paper or fibre cartons produced by six different manufacturers were approved for use in the sale of ice cream and other specified commodities under section 22, chapter 98, General Laws; four vending machines, one coin-operated door-lock, and three types of coin-operated turnstiles were approved under section 283, chapter 94, General Laws; five manufacturers of glass milk jars and one manufacturer of fibre milk jars were authorized to seal certain of their products under sections 15 and 16, chapter 98, General Laws; and four concerns were authorized to seal certain clinical thermometers of their manufacture under section 13, chapter 98, General Laws. One type of coin-operated personal weighing machine was disapproved.

LICENSES.

Transient Vendors.

There were 679 transient vendors' licenses issued and fees of \$16,975 received from this source, as compared with 711 licenses and fees of \$17,775 during the preceding year. As a prerequisite to the granting of these licenses, each applicant filed a surety bond in the amount of \$500 or deposited that amount of cash with the director to cover claims arising from the business conducted under such licenses. Notices of 11 such claims were filed during the year preliminary to bringing suit against the licensees and their sureties but it is understood that practically all of these claims were settled out of court.

Hawkers and Pedlers.

Hawkers' and pedlers' licenses issued during the year showed an increase of 790 in the number issued and a corresponding increase of \$21,189 in the fees received therefor, there being 3714 licenses issued and \$103,925 received for fees. This increase is chiefly due to the enactment of chapter 185, acts of 1927, which materially reduced the number of exempted articles which hawkers and pedlers had previously been permitted to sell without license. There were 356 licenses transferred, and 329 disabled veterans' licenses were issued without fee, an increase of 15 as compared with the preceding year.

EDUCATIONAL AND CO-OPERATIVE ACTIVITIES.

Besides the bulletin and other printed matter which was mailed at appropriate times to sealers and others interested, a close contact was maintained with all local sealers who were free to call upon the director or any of the inspectors for information or other necessary assistance.

Inspector John J. Cummings represented this division at the National Conference of Weights and Measures Officials of the United States, held at Washington, D. C., May 24 to 27, inclusive. He addressed the conference upon the workings of the Massachusetts law relative to the approval of types of weighing and measuring devices and in return gained considerable information of value from officials of other states.

On July 10, at Hyannis, Inspector L. D. F. Marston, addressed a class of 22 school and district nurses relative to the use of scales in their work.

Inspector John P. McBride attended the annual convention of the New York State Association of Sealers of Weights and Measures held at Syracuse, N. Y., July 19 to 21, and delivered an address on "The Legal Aspect of Weights and Measures Work."

The director and all inspectors were in constant attendance at the annual convention of the Massachusetts Association of Sealers of Weights and Measures, held at the Massachusetts Institute of Technology October 18 and 19. President S. W. Stratton of the Institute, Ralph W. Smith of the United States Bureau of Standards, and other prominent experts delivered instructive addresses and the convention also featured a prize contest between the pupils of the Cambridge high schools who submitted essays upon the subject of "The Value of a Sealer of Weights and Measures to a Community."

On November 14, Director Francis Meredith was the speaker at the noon luncheon of the Rotary Club of Danvers.

LOCAL SEALERS OF WEIGHTS AND MEASURES.

Each sealer is required by section 37, chapter 98, General Laws, to file with the director, between the first and tenth of December in each year, a report of the weighing and measuring devices tested, sealed or condemned by him, with an inventory of standards and working equipment in possession of his town or district and other information required by the director. These reports are summarized in the following pages, the

work, if any, performed in the towns of Egremont, Holliston, Pepperell, Peru and Randolph being necessarily omitted as the sealers in these towns failed to comply with the statutory requirement and no report was received from them.

SUMMARY OF LOCAL SEALERS' WORK.

ARTICLE.	Ad-justed.	Sealed.	Non-sealed.	Con-demned.
<i>Scales.</i>				
Platform (5000 lbs. or over)	482	2,880	47	182
Platform (100 to 5000 lbs.)	5,674	24,647	841	879
Counter (100 lbs. or over)	244	1,707	41	52
Counter (under 100 lbs.)	2,873	19,773	375	437
Beam (100 lbs. or over)	309	1,728	60	87
Beam (under 100 lbs.)	106	1,096	20	56
Spring (100 lbs. or over)	394	5,426	28	536
Spring (under 100 lbs.)	3,424	26,393	163	1,582
Computing (100 lbs. or over)	134	1,416	8	62
Computing (under 100 lbs.)	4,353	22,114	236	1,169
Personal weighing (coin slot)	108	2,492	15	263
Prescription	129	1,584	57	115
Jewellers	4	120	4	3
Totals	18,234	111,376	1,895	5,423

<i>Weights.</i>				
Avoirdupois	8,514	171,050	1,445	941
Apothecary	546	21,365	104	667
Metric	307	9,713	404	330
Troy	57	1,920	90	18
Totals	9,424	204,048	2,043	1,956

<i>Measures.</i>				
Dry	1	1,624	—	28
Liquid	447	62,858	461	1,291
Yard measures	—	9,183	—	321
Tapes	—	140	—	2
Glass graduates	—	811	—	61
Ice cream cans	—	1,005	—	21
Fuel baskets	—	2,330	—	73
Vehicle tanks (compartments)	3	201	—	—
Totals	451	78,152	461	1,797

<i>Automatic Measuring Devices.</i>				
Gasoline pumps	4,662	18,506	543	1,036
Gasoline meters	—	431	—	21
Kerosene pumps	187	2,836	245	120
Oil pumps (lubricating, etc.)	660	7,787	3,623	160
Molasses pumps	29	568	139	30
Quantity stops (on measuring pumps)	11,597	101,458	—	—
Leather measuring machines	3	201	2	17
Cloth measuring machines	—	1,010	—	42
Taximeters	—	3,813	—	139
Totals	17,138	136,610	4,552	1,565

Miscellaneous weighing and measuring devices	—	58	—	2
Sealing fees collected	\$54,054.59			
Adjusting charges	5,270.22			
Total collected	\$59,324.81			

Reweighings and Remeasurements.

COMMODITY.	Number of Reweigh- ings, etc.	Correct.	Under.	Over.
Bread	36,903	20,984	5,027	10,892
Butter	15,668	13,158	1,013	1,497
Charcoal (in paper bags)	1,795	1,232	242	321
Coal (loads)	1,302	420	233	649
Coal (in paper bags)	10,839	5,937	1,272	3,630
Coke (in paper bags)	1,264	1,147	26	91
Confectionery	6,339	5,540	228	571
Dry commodities	32,761	26,680	3,006	3,075
Dry goods	498	349	64	85
Flour	9,197	6,243	1,266	1,688
Fruits and vegetables	10,611	7,222	1,979	1,410
Grain and feed	1,208	1,010	94	104
Hay	472	264	142	66
Ice	1,044	537	169	338
Liquid commodities	6,173	4,909	664	600
Meats and provisions	13,988	11,905	1,130	953
Wood (cord)	642	593	28	21
Wood (kindling)	319	287	16	16
Wood (in paper bags)	5,869	5,774	59	36
Upper leather (skins)	55	55	—	—
Miscellaneous	934	832	73	29
Totals	157,881	115,078	16,731	26,072

An analysis of the sealers' annual reports also shows other activities including the weighing of 1832 loads of coal, hay, grain, crushed stone, gravel and other materials for municipal departments; inspections of 16,464 paper and fibre cartons, 5,833 pedlers' licenses, 7,906 manufacturers' sealed milk jars, 1,941 coal weight certificates, 39,583 markings on food packages, 20,618 weight statements on bread, 4,561 wholesale milk cans, 531 transient vendors, 5,308 clinical thermometers, 2,465 pedlers' scales, 2,733 coal and ice scales, 797 junk scales, 23,184 ice cream cans, and 4,091 other miscellaneous inspections. They also tested 280 Climax baskets, 12 apple barrels, 280 United States standard barrels, 2,737 cartons, 973 standard boxes for farm produce, 4,165 gasoline pumps (retests after sealing), 4,402 berry baskets, 9,850 sealed milk jars, and 1,832 other miscellaneous containers.

PROSECUTIONS.

NATURE OF OFFENSE	Number of Complaints	Convicted	Discharged	Pleaded Nolo	Filed	Sentence Suspended	Continued	Amount of Fines Imposed
Giving insufficient weight of bread . . .	9	8	1	-	-	-	-	\$120
Giving insufficient weight of butter . . .	1	1	-	-	-	-	-	20
Giving insufficient weight of coal . . .	9	6	2	1	1	-	-	475
Giving insufficient weight of ham . . .	11	9	-	2	-	-	-	155
Giving insufficient weight of ice . . .	24	19	5	-	2	-	-	376
Giving insufficient weight of meat . . .	3	2	-	1	1	-	-	55
Giving insufficient weight of pork . . .	1	1	-	-	1	-	-	-
Giving insufficient weight of potatoes . .	8	5	-	3	-	-	-	155
Giving insufficient weight of sand . . .	3	3	-	-	-	-	-	75
Giving insufficient weight of vegetables .	1	1	-	-	-	-	-	25
Giving insufficient weight (miscellaneous)	23	20	1	1	1	-	1	370
Attempt to give insufficient weight of coal	1	-	1	-	-	-	-	-
Attempt to give insufficient weight of fowl	6	6	-	-	-	-	-	60
Attempt to give insufficient weight (mis- cellaneous) . . .	1	1	-	-	-	-	-	10
Giving insufficient measure of cinders . .	1	1	-	-	1	-	-	-
Giving insufficient measure of gasoline . .	1	1	-	-	-	-	-	20
Giving insufficient measure of turpentine .	1	-	-	1	-	-	-	-
Giving insufficient measure of wood . . .	4	4	-	-	1	-	-	95
Violation of bread law . . .	6	5	1	-	1	-	-	50
Selling coal without weighting same . . .	6	5	1	-	-	-	-	80
Selling coal without weigher's certificate .	3	3	-	-	-	-	-	105
Not having coal weighed by sworn weigher .	1	1	-	-	-	-	-	10
Failure to post price list of ice upon vehicle	2	2	-	-	-	-	-	10
Failure to file price list of ice with sealer .	1	-	1	-	-	-	-	-
Using false scale . . .	7	6	1	-	1	-	-	60
Using illegal scale . . .	1	1	-	-	-	-	-	25
Using condemned scale . . .	1	1	-	-	-	-	-	10
Using unsealed scale . . .	4	4	-	-	2	-	-	30
Using unsealed measure . . .	5	4	1	-	-	-	-	40
Interference with sealer . . .	3	1	2	-	-	-	-	10
Peddling without license . . .	42	38	1	-	9	1	4	655
Peddling under expired license . . .	1	1	-	-	-	-	-	50
Employing minor to peddle without license	1	1	-	-	-	-	-	25
Furnishing goods to minor to peddle with- out license . . .	1	1	-	-	-	-	-	5
Conducting transient business without license . . .	2	1	1	-	-	-	-	25
Totals . . .	195	163	19	9	22	1	5	\$3,201

FINANCIAL STATEMENT.

Receipts.

1372 State (hawkers' and pedlers') license fees	\$68,600.00
528 County (hawkers' and pedlers') license fees	2,334.00
819 City (hawkers' and pedlers') license fees	21,268.00
995 Town (hawkers' and pedlers') license fees	11,723.00
679 Transient vendors' license fees	16,975.00
Transfer fees	201.00
Total receipts from license fees	<u>\$121,101.00</u>
Receipts from fees for testing clinical thermometers	263.65
From sale of standards, etc.	23.00
Accumulation, badge account	150.00
Fees received for licenses not issued	139.00
Interest on deposits	322.74
Total	<u>\$121,999.39</u>

Payments to State Treasurer.

1372 State license fees	\$68,600.00
528 County license fees	528.00
819 City license fees	819.00
995 Town license fees	995.00
679 Transient vendors' license fees	16,975.00
Transfer fees	201.00
Interest on deposits	322.74
Fees for testing clinical thermometers	263.65
Receipts from sale of standards, etc.	23.00
Accumulation, badge account	150.00
Fees received for licenses not issued	139.00
Total payments to State Treasurer	<u>\$89,016.39</u>

Payments to Treasurers on Account of Hawkers' and Pedlers' Licenses.

Counties	\$1,806.00
Cities	20,449.00
Towns	10,728.00
Total	<u>\$121,999.39</u>

Summary.

Appropriation personal services	\$27,000.00	
Expended	26,870.00	
		\$130.00
Appropriation general expense	8,900.00	
Expended	6,750.08	2,149.92
Total unexpended		<u>\$2,279.92</u>
Total income to commonwealth from licenses, interest, fees for clinical thermometers, etc.		\$89,016.39
Total expenditures		<u>33,620.08</u>
Excess of income over expenditures		\$55,396.31

REPORT OF THE DIVISION OF STATISTICS

ROSWELL F. PHELPS, *Director*.

The principal branches of the work of the Division of Statistics are as follows:

1. Collection and publication of statistics of labor,
2. Collection and publication of statistics of manufactures,
3. Supervision of public employment offices.

These several branches of its work during the year ending November 30, 1927 are discussed in this report. Statistical tables summarizing the results of certain of the more important investigations conducted by the division during the year and the activities of the four public employment offices are presented, and data for prior years are also included for purposes of comparison.

1. STATISTICS OF LABOR.

The statistics of labor collected by the division are published as "Labor Bulletins," each constituting a "Part" of the "Annual Report on the Statistics of Labor." Numerous press notices, in mimeographed form, containing the results of regular monthly surveys and special inquiries, are issued for the purpose of making immediately available information of current interest.

Annual Report on the Statistics of Labor (Public Document No. 15).

The report for the year 1927 consists of four "Parts," three of which have been issued and the fourth is now in preparation. The titles of these "Parts" are as follows:

Part I. Time Rates of Wages and Hours of Labor in Massachusetts, 1926 (Labor Bulletin No. 150).

Part II. Twenty-seventh Annual Directory of Labor Organizations in Massachusetts, 1927 (Labor Bulletin No. 151).

Part III. Statistics of Labor Organizations in Massachusetts, 1925 and 1926 (Labor Bulletin No. 152).

Part IV. Time Rates of Wages and Hours of Labor in Massachusetts, 1927 (Labor Bulletin No. 153).

The subject matter of each report is indicated by its title. Parts I and IV are similar in nature, the latter containing data collected as of July 1, 1927 and compiled largely during the fiscal year 1927. It is, therefore, properly chargeable to that appropriation. Previous issues of this character have usually not been completed until well along in the next fiscal year and have been charged to the appropriation for the year in which published. Under present methods it is possible to complete the entire survey in much less time and probably during the same fiscal year to which the information relates. The major portion of this publication deals with those basic time rates and conditions of employment affecting members of labor organizations in Massachusetts and in the remainder of the report are presented like data concerning employment in various public services, transportation, and in telephone and telegraphic service, secured from the official records of the employers.

The Directory of Labor Organizations is a complete listing of all labor organizations of whatever type known to be existent in Massachusetts, providing a condensed record of time and place of meetings, names of corresponding officials, etc. of each such organization. A total of 1,668 organizations were listed in this issue, of which number 140 were national and international organizations, 70 were state and district councils, 94 were central labor unions and councils, and 1,364 were local unions.

In connection with the directory schedule, the local unions submitted their membership, by sex. A tabulation of these data shows that at the

close of 1926 there were 1,253 local unions in Massachusetts with a reported membership of 226,841, of whom 195,897 were males and 30,944 were females.

Monthly Surveys and Press Notices.

Employment and Earnings in Manufacturing Establishments. The collection from representative manufacturing establishments in Massachusetts of pay-roll and other relevant data covering a representative week in each month is a regular branch of the statistical work of the division, which is following the plan recommended by the Committee on Governmental Labor Statistics of the American Statistical Association, on which the department is represented by the Director of the Division of Statistics. The division co-operates in this work with the United States Bureau of Labor Statistics, to the mutual satisfaction of both, thus avoiding duplication in the work of collection of similar data by two separate agencies.

The number of manufacturing establishments canvassed each month exceeds 1,000. For November, 1927 returns were received from 1,006 establishments which reported a normal force of 276,885 wage-earners, or 46 per cent of the average number employed in the year 1926 (602,343) according to the annual census of manufactures. Of this number 228,769 (or 82.6 per cent) were employed the middle week in November, 77.3 per cent of whom were reported as employed in establishments operating on full-time schedules. The weekly earnings of those employed aggregated \$5,567,566, or an average of \$24.34 per person. The returns are carefully weighted and adjusted, as more current information becomes available, so as to be truly representative by industries, by localities, and by industries within the leading municipalities, and by size of establishments.

The questionnaire used is simple in form and includes inquiries, nearly all of which can be answered simply by reference to pay-roll records. The results of the surveys are published in mimeographed form giving much detail for 39 important industries and 25 leading industrial cities. Each reporting establishment receives, with the schedule for the then current month, a summary of the returns for the previous month. The press and those on a large mailing list are furnished the releases, as issued.

There has been prepared from the returns and is presented below a special tabulation of index numbers of employment for all industries and for the three most important industries in Massachusetts, these three together representing about 40 per cent of the wage-earners in the manufacturing establishments in the commonwealth. In this tabulation the index numbers for the year 1925 and 1926 were derived from the annual census data (data for 1926 being the latest available) and, for the remainder of the period, from the monthly volume of employment reports.

Index Numbers of Employment of Wage-earners in Representative Manufacturing Establishments in Massachusetts, All Industries, and Three Leading Industries: By Months, 1925, 1926, and 1927.

(Base:—Annual Census of Manufactures—Average for 1919-1923 equals 100.0)

MONTHS	ALL INDUSTRIES (100.0 = 653,773 Wage-earners)			COTTON GOODS (100.0 = 113,371 Wage-earners)			BOOTS AND SHOES ¹ (100.0 = 78,687 Wage-earners)			WOOLEN AND WORSTED GOODS (100.0 = 58,585 Wage-earners)		
	1925	1926	1927	1925	1926	1927	1925	1926	1927	1925	1926	1927
January . . .	90.7	92.7	90.7	88.5	84.6	80.5	81.3	82.6	83.1	99.9	94.3	97.1
February . . .	92.2	94.0	92.3	89.5	85.6	82.0	86.3	87.7	85.1	100.7	94.4	97.8
March . . .	92.5	95.4	91.4	90.2	86.2	80.3	89.2	89.3	84.8	94.3	97.9	95.0
April . . .	91.3	93.4	89.3	90.1	84.8	78.2	84.1	85.3	79.1	92.6	91.9	92.5
May . . .	89.4	92.0	87.7	87.1	82.2	77.1	78.0	84.5	75.4	87.5	89.0	89.1
June . . .	87.1	89.4	85.9	84.4	78.1	77.7	70.1	81.0	68.5	85.5	85.0	89.2
July . . .	86.3	87.1	83.9	79.6	73.1	76.6	77.7	83.5	76.6	85.8	82.9	87.1
August . . .	88.3	89.6	85.9	78.2	75.2	74.8	85.6	88.9	80.0	91.1	88.7	86.0
September . . .	90.1	92.4	87.1	78.6	77.5	76.2	87.3	92.0	79.4	92.1	93.3	87.2
October . . .	92.2	94.6	87.4	82.6	80.2	76.2	85.9	91.9	77.8	94.9	101.6	87.4
November . . .	93.1	93.7	86.2	83.7	80.6	74.3	80.2	85.0	72.3	102.7	101.0	88.5
December . . .	92.4	91.3	83.0	86.0	80.2	67.4	76.5	78.4	62.8	97.0	99.0	88.1
Average . . .	90.5	92.1	87.6	84.9	80.7	76.8	81.9	85.8	77.1	93.7	93.3	90.4

¹ Including boot and shoe cut stock and findings.

Based on the average for the five-year period considered as normal, employment in all industries as a group during each of the three years 1925, 1926, and 1927 has been continuously below normal. With the exception of a few months, similar conditions obtained in each of the three leading industries. The average for 1927 was in each instance below the average for 1925 and 1926.

No index numbers are presented representing the trend of aggregate weekly earnings or of average weekly earnings per person as the records show that the trend of the aggregate earnings during the past three years corresponds very closely with the employment trend, and there has been a noticeable absence of general wage adjustments during this same period. The average weekly earnings of those actually employed has shown relatively little fluctuation from month to month.

Employment and Earnings of Building Tradesmen. In April, 1927, the division began the collection of payroll data from building contractors throughout the commonwealth in order to supplement its regular monthly survey relative to employment and earnings in manufacturing industries. The questionnaire used is simple in form, calling for the number of building tradesmen, including laborers, employed during the middle week in each month by the individual contractors and building corporations in Massachusetts, the total wages paid for such employment, the total number of man-hours represented thereby, the number employed the corresponding week one year ago, and a statement of any general wage adjustments affecting those employed.

The number of building contractors reporting to the department is between 300 and 400. Schedules were originally sent a very large number of companies and individuals listed as contractors, many of whom were found not to properly come within this classification and many others were individuals who occasionally employ others to help them. The number of contractors reporting is not as yet as large as could be desired but, nevertheless, is believed to be fairly representative. Efforts will be made to increase the number reporting. The results of each monthly canvass are summarized and released in mimeographed form, following the usual practice, and there are now available for a period of months data not heretofore on record and for which there is a definite demand. The returns so far secured are summarized in the table which follows.

*Index Numbers of Employment and Earnings of Building Tradesmen in
Massachusetts, as Reported by Building Contractors.*

(July, 1927 = 100)

MONTHS 1927	Number of Trades- men	Number of Man- Hours	Average Hours per Man	Amount Paid in Wages	Average Weekly Earnings	Average Hourly Earnings
April	89.0	96.9	108.8	93.3	105.0	96.3
May	87.3	90.5	103.7	89.8	103.1	99.3
June	97.4	99.1	101.7	98.4	101.1	99.2
July	100.0	100.0	100.0	100.0	100.0	100.0
August	102.1	100.9	98.8	101.6	99.5	100.6
September	103.5	103.8	100.3	106.8	103.2	102.8
October	101.5	96.4	95.2	99.4	97.9	102.9
November	102.8	100.6	98.2	101.5	98.7	100.5

The returns for the month of July, usually considered an active month for building, were selected as a base = 100.0. These returns covered 8,629 building tradesmen employed by 355 building contractors. The total number of man-hours worked that representative week was 351,886, or 40.8 hours per week per man. The amount paid in wages was \$328,652, or an average of \$38.09 per week, or 93.4 cents per hour per man.

It will be observed upon reference to the six series of index numbers that the number of building tradesmen employed was smallest in May and close to or above normal in the months following. The trends of the index numbers representing man-hours and the amount paid in wages, were very similar, as were the trends representing average hours worked per week and average monthly earnings. The average hourly earnings showed the least fluctuation.

Unemployment of Organized Building Tradesmen. There has been resumed the collection of statistics of unemployment and membership of organized building tradesmen in Massachusetts in order to secure current information relative to employment conditions in the building trades in Massachusetts. The plan being followed is similar to that in effect throughout a period of sixteen years, 1908-1923, but the present canvass is limited to the building trades, whereas the former covered all organized labor no matter what industry or trade. The information is now being secured as of the first full working day of each month, while under the former plan the information was secured at quarterly intervals.

A mimeographed press release is prepared each month in which are presented brief surveys, largely in tabular form, of the results of the current survey, together with comparable data for prior reporting dates. The principal data for each of the surveys, the first of which was undertaken as of April 1, 1927, are presented in the following table:

*Number and Membership of Unions Reporting, and Number and Percentage of Membership Reported as Unemployed on the First Full Working Day in Each Month Beginning April, 1927:
By Causes of Unemployment.*

Classification	April	May	June	July	Aug.	Sept.	Oct.	Nov.
Number of Unions reporting	273	303	271	273	267	273	289	286
Membership of Unions reporting	47,565	49,670	48,947	47,627	49,671	50,982	51,529	51,484
Number of Members Reported Unemployed:								
All Causes	13,038	9,869	9,104	8,192	7,287	7,801	6,944	7,052
Lack of work or materials	11,745	8,828	7,631	7,294	6,145	6,544	5,896	6,195
Strike or lockout	66	70	460	140	55	54	151	50
Sickness, accident, or old age	826	890	849	682	947	873	871	780
Unfavorable weather	139	62	161	76	120	329	26	27
Other reasons	262	19	3	—	20	1	—	—
Percentages Unemployed:								
All Causes	27.4	19.9	18.4	17.2	14.7	15.3	13.5	13.7
Lack of work or materials	24.7	17.8	15.6	15.3	12.4	12.8	11.4	12.0
Strike or lockout	0.1	0.1	0.9	0.3	0.1	0.1	0.3	0.1
Sickness, accident, or old age	1.7	1.8	1.7	1.4	1.9	1.7	1.7	1.5
Unfavorable weather	0.3	0.1	0.3	0.2	0.2	0.6	0.1	0.1
Other reasons	0.6	*	*	*	*	*	*	*

* Less than one-tenth of one per cent.

The smallest number of unions reporting in any one month was 267 and the greatest 303. The smallest number of tradesmen covered was 47,565 and the greatest, 51,529, the latter figure representing close to 100.0 per cent of the total number of organized building tradesmen in Massachusetts. Quite naturally there was relatively more unemployment in the spring months than during the summer and fall months, 27.4 per cent of the tradesmen being unemployed on April 1, as compared with an average of about 15.0 per cent for the five months July to November, inclusive. The principal causes of unemployment at all times was lack of work or materials, 24.7 per cent being unemployed for this reason on April 1, as compared with an average of about 13.0 per cent for the five months named above. The number on strike represented less than one per cent on each reporting date. Sickness was responsible for between 1.4 per cent and 1.9 per cent unemployed.

The returns are also tabulated and shown in the press releases so as to indicate unemployment by the principal occupational groups. The following table presents a summary of the returns on this basis for each reporting date.

Percentage of Organized Building Tradesmen Unemployed, All Causes, on the First Full Working Day in Each Month Beginning April, 1927: By Principal Occupations.

Occupations	April	May	June	July	Aug.	Sept.	Oct.	Nov.
All occupations	27.4	19.9	18.4	17.2	14.7	15.3	13.5	13.7
Bricklayers, masons, and plasterers	30.2	15.8	16.6	12.2	10.8	11.6	10.0	9.5
Carpenters	27.7	16.8	15.4	13.5	15.1	17.3	12.2	12.7
Electrical workers	16.1	11.4	12.5	12.5	15.4	13.0	9.0	6.8
Hod carriers and building laborers	30.5	31.7	28.1	27.7	16.8	19.1	19.9	20.9
Lathers	22.0	19.4	13.8	10.5	8.6	11.8	6.3	7.8
Painters, decorators, and paperhangers	23.7	17.7	16.0	24.4	13.2	12.3	20.9	21.9
Plumbers, gasfitters, and steamfitters	31.5	26.9	27.8	21.3	15.2	10.8	6.0	5.9
Sheet metal workers	18.3	11.6	16.9	19.6	19.5	5.2	4.2	4.1
Other occupations	26.5	19.7	14.5	13.0	14.0	13.0	13.7	11.3

During the period under consideration there were many changes between months in the extent of unemployment in different occupations. The general tendency was towards less unemployment in the summer and fall, well illustrated by the index numbers representing bricklayers, masons, and plasterers, carpenters, and lathers. This tendency was not observed in connection with the painters, decorators, and paperhangers. The numbers representing unemployment of plumbers, gasfitters, and steamfitters showed an almost unbroken trend towards less unemployment, the April 1 unemployment figure being 31.5 per cent and the November 1 figure, 5.9 per cent. The trends in the other occupational groups were quite dissimilar and unlike those of the groups already mentioned.

The returns are further tabulated so as to show the status of unemployment of building tradesmen in each of fourteen cities in Massachusetts in which those tradesmen are well organized, but these data are not here presented because of limited space in this publication.

Building Statistics. Building department officials in each of the 39 cities of the commonwealth report to this department at the close of each month, on a prescribed form, the number of applications filed for permits to build, together with the values represented thereby, classified by types of structures and their intended use. Additional details are furnished showing the number of families to be provided for by each class of residential building proposed. The mimeographed summaries of the complete returns, issued during the month immediately following that for which the statistics are furnished, are given quite wide publicity and are much in demand.

The principal summary data for the 39 cities in Massachusetts, considered as a group, for the years 1927, 1926, and 1925, are presented in the following table:

*Number and Estimated Cost of Buildings for which Applications Were Filed for Permits to Build in the 39 Cities in Massachusetts:
By Years, 1925-1927.*

TYPE OF CONSTRUCTION	1927	1926	1925
Number of Buildings			
<i>Totals</i>	37,290	38,098	43,531
New residential buildings	8,477	9,159	11,795
New non-residential buildings	11,522	13,091	16,084
Additions, alterations, and repairs	17,291	15,848	15,652
Estimated Cost of Buildings			
<i>Totals</i>	\$148,908,817	\$156,173,678	\$209,146,270
New residential buildings	77,652,301	79,026,088	117,366,438
New non-residential buildings	46,307,564	52,963,694	67,681,423
Additions, alterations, and repairs	24,948,952	24,183,896	24,098,359

The number of applications filed in 1927 in the 39 cities in Massachusetts for all types of building construction combined was 37,290, or 2.1 per cent less than the corresponding number (38,098) filed in 1926. The estimated cost in 1927 was \$148,908,817, or 4.7 per cent less than the estimated cost in 1926 (\$156,173,678). It will be observed that both years were much alike with respect to the type of construction work being undertaken. This slight decrease was mostly due to less activity in the construction of new non-residential buildings, the number of applications for which was 11,522 in 1927, or 12.0 per cent less than the number (13,091) filed in 1926, and the estimated cost was \$46,307,564 in 1927, or 12.6 per cent less than the cost (\$52,963,694) in 1926.

In 1927, the estimated cost of the 8,477 new residential buildings planned was \$77,652,301, or only 1.7 per cent less than the cost (\$79,026,088) represented by the 9,159 buildings planned in 1926.

There was an increase in the number of applications for additions, alterations, and repairs, and an increase in the cost of such work in 1927 (17,291 applications, representing \$24,948,952) as compared with such work in 1926 (15,848 applications, representing \$24,183,896). This type of work was the only one showing more activity.

In 1927, the estimated cost of new residential buildings proposed constituted 52.1 per cent of the aggregate for all classes of buildings, as compared with 50.6 per cent in 1926; the cost of new non-residential buildings constituted 31.1 per cent of the aggregate cost in 1927, as compared with 33.9 per cent in 1926; and the cost of additions, alterations, and repairs to buildings already erected constituted 16.8 per cent of the aggregate in 1927 and 15.5 per cent in 1926.

The conclusion drawn from the data presented above is that the year 1927, while not an exceptional building year, nevertheless compares very favorably with other years.

Data for individual cities for 1927, classified by types of construction, with totals for 1926 for comparison, are presented in the following table:

Estimated Cost of Prospective Building in Each of the 39 Cities in Massachusetts in 1927 and 1926: By Classes of Projects.

CITIES	1927				1926
	New Buildings		Additions, Alterations, and Repairs	Totals— All Classes of Projects	Totals— All Classes of Projects
	Residential	Non- Residential			
<i>Totals, 39 Cities</i>	<i>\$77,652,301</i>	<i>\$46,307,564</i>	<i>\$24,948,952</i>	<i>\$148,908,817</i>	<i>\$156,173,678</i>
Attleboro	316,750	328,395	104,170	749,315	797,082
Beverly	717,200	127,675	237,155	1,082,030	910,139
Boston	27,207,143	20,084,067	9,147,994	56,439,204	51,484,404
Brockton	864,175	278,945	231,239	1,374,359	1,879,405
Cambridge	3,046,150	5,250,845	1,262,604	9,559,599	8,490,645
Chelsea	423,300	130,605	300,955	854,860	1,112,699
Chicopee	416,000	683,460	77,500	1,176,960	1,541,860
Everett	1,429,500	583,135	117,100	2,129,735	3,487,255
Fall River	1,089,884	443,535	309,274	1,842,693	2,156,141
Fitchburg	234,900	356,965	46,110	637,975	1,557,388
Gardner	179,700	95,775	86,610	362,085	1,263,335
Gloucester	448,800	110,997	210,710	770,507	963,486
Haverhill	386,100	266,200	257,325	909,625	844,715
Holyoke	1,283,050	230,200	530,950	2,044,200	2,607,125
Lawrence	204,800	555,015	185,414	945,229	1,841,142
Leominster	363,000	186,900	83,200	633,100	484,700
Lowell	340,500	278,460	356,155	975,115	1,577,635
Lynn	1,986,500	1,066,039	821,636	3,874,175	4,612,145
Malden	2,030,525	703,561	605,707	3,339,793	3,614,356
Marlborough	138,000	96,550	174,250	408,800	379,900
Medford	3,266,400	669,851	334,261	4,270,512	5,642,105
Melrose	1,765,600	307,774	141,317	2,214,691	1,936,435
New Bedford	492,900	497,737	422,315	1,412,952	2,311,955
Newburyport	211,000	308,800	38,900	558,700	255,650
Newton	6,563,125	2,677,991	897,490	10,138,606	8,393,954
North Adams	83,100	342,770	152,815	578,685	387,189
Northampton	573,650	191,650	143,432	908,752	1,142,310
Peabody	637,850	122,400	164,490	924,740	928,245
Pittsfield	707,900	442,575	565,050	1,715,525	1,497,595
Quincy	3,869,235	1,367,898	382,284	5,619,417	6,240,661
Revere	1,023,140	206,150	434,570	1,663,860	1,693,187
Salem	1,625,000	265,600	834,030	2,724,630	2,106,125
Somerville	1,831,420	1,133,303	420,827	3,385,550	5,376,091
Springfield	4,844,150	2,334,614	1,719,055	8,897,819	8,736,706
Taunton	357,405	443,708	283,517	1,084,630	759,744
Waltham	1,406,250	640,545	171,130	2,217,925	2,853,209
Westfield	419,299	85,435	127,563	632,297	866,211
Woburn	316,750	187,270	54,405	558,425	556,705
Worcester	4,552,150	2,224,169	2,515,423	9,291,742	12,884,044

The total value of all classes of projects in the 39 cities combined in 1927 was \$148,908,817, more than one-third (37.9 per cent) of which was represented by the total for Boston (\$56,439,204). In each of five other cities (Cambridge, Newton, Quincy, Springfield, and Worcester) the

value of proposed construction work exceeded \$5,000,000. These five cities together with Boston represented \$99,946,387, or slightly more than two-thirds (67.1 per cent) of the entire amount of building in prospect in the 39 cities.

In 15 of the 39 cities the estimated cost of buildings in 1927 exceeded the corresponding estimates in 1926. These 15 cities, and the percentage increases in 1927 over 1926 were: Beverly, 18.9 per cent; Boston, 9.6 per cent; Cambridge, 12.6 per cent; Haverhill, 7.7 per cent; Leominster, 30.6 per cent; Marlborough, 7.6 per cent; Melrose, 14.4 per cent; Newburyport, 118.5 per cent; Newton, 20.8 per cent; North Adams, 49.5 per cent; Pittsfield, 14.6 per cent; Salem, 29.4 per cent; Springfield, 1.8 per cent; Taunton, 42.8 per cent; Woburn, 0.3 per cent.

In 22 of the 39 cities the estimated cost of new *residential* buildings constituted over 50.0 per cent of the aggregate for all classes of buildings. In the following cities the erection of residences was a very important factor in the building program and the estimated cost of residential buildings constituted 60.0 per cent or more of the aggregate for all classes of buildings: Melrose, 79.7 per cent; Medford, 76.5 per cent; Peabody, 69.0 per cent; Quincy, 68.9 per cent; Everett, 67.1 per cent; Beverly, 66.3 per cent; Westfield, 66.3 per cent; Newton, 64.7 per cent; Waltham, 63.4 per cent; Northampton, 63.1 per cent; Brockton, 62.9 per cent; Holyoke, 62.8 per cent; Revere, 61.5 per cent, and Malden, 60.8 per cent.

In six cities the estimated cost of new *non-residential* buildings constituted over 50.0 per cent of the aggregate for all classes of buildings. These cities, with the percentages of representation, were: North Adams, 59.2; Lawrence, 58.7; Chicopee, 58.1; Fitchburg, 56.0; Newburyport, 55.3; and Cambridge, 54.9.

Data are presented in the following table showing, for the years 1927 and 1926, the number of applications for permits for the erection of new housekeeping dwellings, the estimated cost thereof, and the number of family accommodations provided in each of the 39 cities in the state.

*Number and Estimated Cost of New Housekeeping Dwellings Planned
and Number of Accommodations Provided in Each of the 39
Cities in Massachusetts, 1927 and 1926.*

CITIES	1927			1926		
	Number of New House- keeping Dwellings	Estimated Cost of New House- keeping Dwellings	Number of Family Accommo- dations	Number of New House- keeping Dwellings	Estimated Cost of New House- keeping Dwellings	Number of Family Accommo- dations
<i>Totals, 39 Cities</i>	<i>8,467</i>	<i>\$72,324,901</i>	<i>15,829</i>	<i>9,141</i>	<i>\$74,265,564</i>	<i>15,886</i>
Attleboro	69	310,350	75	88	405,950	123
Beverly	93	717,200	111	87	542,800	98
Boston	1,963	22,722,143	5,316	1,729	18,021,788	3,882
Brockton	163	864,175	177	148	755,500	151
Cambridge	201	3,046,150	640	172	4,710,000	878
Chelsea	56	423,300	107	60	624,500	163
Chicopee	88	405,000	106	167	924,600	243
Everett	218	1,429,500	440	231	1,800,000	484
Fall River	186	1,089,884	251	167	919,150	232
Fitchburg	60	234,900	65	116	606,650	148
Gardner	34	179,700	43	113	637,475	138
Gloucester	114	448,800	115	67	567,370	81
Haverhill	73	386,100	89	91	452,900	110
Holyoke	68	1,283,050	275	97	1,187,600	197
Lawrence	23	204,800	43	68	618,500	154
Leominster	64	363,000	89	42	237,700	67
Lowell	75	340,500	78	127	488,100	145
Lynn	209	1,986,500	526	312	2,626,615	608
Malden	278	2,030,525	467	273	1,927,310	426
Marlborough	28	138,000	32	24	127,500	26
Medford	472	3,266,400	626	573	3,947,650	869
Melrose	248	1,765,600	293	186	1,359,600	198
New Bedford	79	492,900	89	106	768,000	133
Newburyport	36	211,000	44	13	77,200	17
Newton	618	6,488,125	734	548	5,980,350	692
North Adams	22	83,100	22	38	125,720	38
Northampton	71	573,650	112	65	398,350	69
Peabody	113	637,850	118	82	519,375	100
Pittsfield	96	707,900	118	100	801,800	120
Quincy	631	3,869,235	1,015	750	4,187,750	1,009
Revere	173	1,023,140	243	148	1,053,800	261
Salem	114	1,325,000	217	100	1,122,000	169
Somerville	143	1,651,420	399	136	1,483,500	352
Springfield	594	4,844,150	1,412	759	4,989,905	1,410
Taunton	69	357,405	90	100	417,970	111
Waltham	198	1,406,250	285	200	1,644,450	345
Westfield	69	419,299	98	92	422,886	104
Woburn	67	316,750	74	68	286,850	70
Worcester	591	4,252,150	795	898	6,496,400	1,465

A comparison of the data with reference to housekeeping dwellings shows that in 1927 as compared with 1926 there were increases in the number of new dwellings to be erected in 17 of the cities, increases in the estimated cost in 16 of the cities, and increases in the number of family accommodations provided in 19 of the cities.

Seven cities (Boston, Cambridge, Medford, Newton, Quincy, Springfield and Worcester) together represented 59.9 per cent of the new housekeeping dwellings, 67.0 per cent of their estimated cost, and 66.6 per cent of the number of family accommodations to be provided, based on the returns for all 39 cities in Massachusetts. In each of these seven cities the value of new housekeeping dwellings exceeded \$3,000,000.

In Boston there were increases in all three items in 1927 as compared with 1926, of 13.5 per cent, 26.1 per cent, and 36.9 per cent respectively. In Cambridge, although the number of buildings increased 16.9 per cent, the cost of the work and the number of families to be accommodated showed marked decreases. Housekeeping dwelling construction in Medford declined in 1927 as compared with 1926. In Newton, the number of dwellings planned increased 12.8 per cent, the cost, 8.5 per cent, and the number of family accommodations, 6.1 per cent. The construction of dwellings in Quincy in 1927 was not up to the 1926 record and the same held true in Springfield. In Worcester the 1927 totals were considerably below the totals for 1926.

In addition to the seven cities named in the foregoing paragraph, dwellings estimated to cost at least \$1,000,000 were planned in each of ten other cities. Of these ten, the city of Melrose showed the greatest improvement in 1927, the number of buildings planned showing an increase of 33.3 per cent, the estimated cost an increase of 29.9 per cent, and the number of family accommodations an increase of 48.0 per cent. Of the remaining 22 cities there were marked decreases in all three respects in Fitchburg, Gardner, Lawrence, Lowell and New Bedford.

Of the total estimated cost of new non-residential buildings planned in the 39 cities in 1927 (\$46,307,564) 78.7 per cent was represented in seven classes of buildings, as follows: 523 stores and other mercantile buildings, \$7,673,033; 22 public works and utilities, \$6,266,617; 27 institutional buildings, \$6,204,850; 56 office buildings including banks, \$4,672,080; 8,551 private garages, \$4,279,936; 216 factories and other work-shops, \$3,747,735, and 490 public garages, \$3,619,368.

Information Service.

Numerous inquiries relative to labor and industrial matters are received at this office, and an endeavor is made to answer each inquiry as completely as the available data permit. In most instances the information desired appears in the printed or mimeographed reports of the division. Quite frequently special tabulations are made in order to answer inquiries calling for information in greater detail. Inquirers are referred to other sources should the subject matter of their inquiries not be within the scope of the work of this office.

A reference library, maintained primarily for the use of the officials of the department, is open to the public and is used extensively by industrial organizations, and by students of labor problems. Two employees of the division devote full time to this branch of the work of the division.

Reports are regularly exchanged with labor departments in other states, with the various departments of the United States Government, with certain foreign countries, and with a number of industrial research organizations; and the more important industrial and trade journals and labor union publications are obtained for reference purposes. The department receives currently 15 daily newspapers, 49 weekly, 188 monthly, and 16 quarterly publications which are examined, and all articles relating either to the work of the department or to subjects that are of value are clipped and referred to the officials of the department and are later filed for future reference.

2. STATISTICS OF MANUFACTURES.

Annual Report of the Statistics of Manufactures.

Preliminary figures for the Census of Manufactures for Massachusetts for the year 1926 for all of the cities of the state have been issued within the year in the form of press notices and data for five years prior to 1926 have also been presented for purposes of comparison.

The returns for 1926 covered 9,903 manufacturing establishments. The results of the preliminary data for *all industries* combined, with data for the year 1925 are presented in the following table:

Principal Data—All Manufacturing Industries Combined: 1926 and 1925.

ITEMS	1926 (Preliminary tabulations)	1925	Increase (+) or decrease (—) in 1926
Number of establishments	9,903 ¹	10,027	—
Value of products	\$3,419,814,877	\$3,426,617,326	—0.2
Value of stock and materials used	\$1,790,611,294	\$1,794,643,051	—0.2
Value added by manufacture	\$1,629,203,583	\$1,631,974,275	—0.2
Total amount paid in wages during the year	\$738,208,510	\$716,155,593	+3.1
Average number of wage-earners employed	602,343	591,438	+1.8
Average yearly earnings of wage-earners	\$1,225.56	\$1,210.87	+1.2

¹ The apparent decline from the year 1925 is largely due to the exclusion from the 1926 canvass of publishing establishments in which no printing was done,—approximately 150 establishments.

Fluctuations in factory prices from year to year materially affect the *value* of products, and value of products, therefore, does not always furnish an accurate measure of the *volume* of goods manufactured in a given period. The year 1926 was definitely one of falling prices. There was continued depression and mal-adjustment in the textile industries, particularly in *cotton goods*, while the recession in activity in *woolen goods* was only relatively less. Notwithstanding serious conditions in these major industries, however, and the consequent withdrawal of labor from them, it is probable that there was little, if any, decline, quantitatively, in the volume of goods produced in the other industries of the state, the most encouraging index being the increase in the average number of wage-earners employed which rose from 591,438 in 1925 to 602,343 in 1926, an increase of nearly two per cent. The increase in the total factory payroll from \$716,155,593 to \$738,208,510, or slightly more than three per cent, indicates that the standard of living in 1926 had not been lowered and that the purchasing power of wage-earners had not been impaired. Average yearly earnings for the year 1926, \$1,225.56 as against \$1,210.87 in 1925, exhibit an increase of 1.2 per cent.

The 15 principal industries in order of importance in the state, based on product value in 1926 were:

	1926	1925
<i>The State</i>	\$3,419,814,877	\$3,426,617,326
Boots and shoes, including cut stock and findings	317,973,155	307,021,475
Woolen and worsted goods	295,175,084	309,528,290
Cotton goods	292,063,441	345,864,097
Electrical machinery, apparatus, and supplies	177,148,280	147,056,901
Rubber goods, including rubber tires and inner tubes	110,305,176	108,594,705
Printing and publishing ¹	107,283,046	125,176,183
Dyeing and finishing textiles	102,814,471	119,109,701
Foundry and machine-shop products	99,321,009	90,638,434
Paper and wood pulp	98,598,943	90,126,831
Bread and other bakery products	74,014,253	68,845,944
Leather, tanned, curried, and finished	66,600,352	70,708,050
Slaughtering and meat-packing, wholesale	63,220,783	60,710,531
Boots and shoes, rubber	53,129,233	53,626,091
Confectionery	50,669,112	49,333,972
Textile machinery and parts	47,739,905	51,411,150
All other industries	1,463,758,634	1,428,864,971

¹ Figures not strictly comparable. Publishing establishments in which no printing was done, approximately 150 in number, were omitted from the canvass in 1926.

METROPOLITAN BOSTON.

In the following table data having reference to manufactures in metropolitan Boston are presented for the several cities and towns included in this district:

*Principal Data Relative to Manufactures in Metropolitan Boston, 1926:
By Cities and Towns.*

MUNICIPALITIES	Number of Establishments	Value of Stock and Materials Used	Amount of Wages Paid during the Year	Average Number of Wage-earners Employed	Value of Products
<i>Metropolitan Boston</i>	<i>4,577</i>	<i>\$639,566,767</i>	<i>\$245,916,443</i>	<i>184,814</i>	<i>\$1,272,959,199</i>
<i>The 14 Cities</i>	<i>4,264</i>	<i>576,035,321</i>	<i>222,505,314</i>	<i>165,586</i>	<i>1,153,049,831</i>
Boston	2,568	297,896,158	110,797,398	80,722	591,191,184
Cambridge	355	31,366,021	28,769,050	22,703	176,027,871
Chelsea	126	17,121,147	8,184,927	6,256	34,532,084
Everett	118	33,066,032	7,894,454	5,507	54,963,851
Lynn	375	46,836,440	30,035,793	21,951	116,667,347
Malden	117	13,133,114	4,896,315	4,648	29,528,240
Medford	52	3,348,993	1,233,129	1,045	6,089,752
Melrose	25	2,851,530	920,688	731	5,695,257
Newton	61	8,597,681	3,124,141	2,472	16,222,994
Quincy	160	8,591,375	9,859,451	6,326	23,931,234
Revere	17	514,756	232,122	172	1,181,397
Somerville	140	48,573,764	6,606,888	5,316	62,629,010
Waltham	98	6,044,846	7,046,896	5,661	19,293,078
Woburn	52	8,083,464	2,904,032	2,076	15,096,532
<i>The 26 Towns</i>	<i>313</i>	<i>63,541,446</i>	<i>23,411,129</i>	<i>19,228</i>	<i>119,909,368</i>
Arlington	23	627,177	289,048	187	1,613,173
Belmont	7	99,751	59,120	44	222,070
Braintree	16	11,191,188	1,805,191	1,656	15,605,768
Brookline	22	526,135	327,297	227	1,173,581
Canton	18	3,760,793	1,388,626	1,144	7,365,706
Dedham	17	1,316,830	585,593	529	1,925,728
Hingham	4	125,630	162,602	121	384,080
Milton	3	56,019	43,683	31	144,541
Needham	23	1,324,015	563,821	611	3,145,521
Reading	15	4,044,323	660,622	464	5,876,688
Saugus	9	545,302	155,927	127	859,430
Stoneham	22	1,789,021	892,524	789	3,836,463
Wakefield	26	4,139,347	2,011,873	1,770	8,430,700
Watertown	33	22,610,637	9,835,923	7,947	47,084,136
Wellesley	6	626,951	121,536	101	835,962
Weymouth	26	6,081,319	2,310,183	1,931	11,979,648
Winchester	21	3,506,289	1,586,397	1,133	6,605,735
Winthrop	6	131,690	47,327	40	293,950
8 other towns ¹	16	1,039,029	563,336	376	2,526,438

¹ Includes four towns (Cohasset, Hull, Nahant, and Westwood) in which there were no manufacturing establishments, and four towns (Dover, Lexington, Swampscott, and Weston) for which data cannot be shown separately without disclosing the operations of individual establishments.

Metropolitan Boston, as defined for purposes of the Census of Manufactures in Massachusetts, comprises fourteen cities and twenty-six towns, included within a radius of about fifteen miles from the state house. In this district returns from 4,577 establishments manufactured products valued at \$1,272,959,199. The number of wage-earners employed in these establishments during the year was 184,814, and the total amount paid in wages was \$245,916,443. In this area relatively few textile industries are located, and it will be noted that conditions for the district were to a considerable extent better than for the state as a whole, in 1926, and measurably better than they were in 1925. Comparable figures for the two years are as follows:

	1926	1925	Per Cent of Increase
Number of establishments	4,577	4,511	1.5
Value of stock and materials used	\$639,566,767	\$606,378,433	5.5
Amount of wages paid during the year	\$245,916,443	\$231,857,192	6.1
Average number of wage-earners employed	184,814	175,801	5.1
Value of products	\$1,272,959,199	\$1,235,875,285	3.0

The value of products in the metropolitan district constituted 37.2 per cent of the state total in 1926, and the average number of wage-earners (184,814) constituted approximately 31 per cent of the total number employed in all manufacturing establishments in the state. The principal industry in the metropolitan area was the manufacture of boots and shoes, which, including cut stock and findings, had a product value of \$122,051,897; followed by electrical machinery, apparatus, and supplies, \$92,373,733; printing and publishing, \$77,601,202; clothing, men's and women's, \$58,596,182; slaughtering and meat packing, wholesale, \$48,886,167, bread and other bakery products, \$47,240,814; confectionery, \$46,764,462; rubber boots and shoes, \$46,261,335; foundry and machine-shop products, \$43,806,802; rubber goods, including rubber tires and inner tubes, \$43,717,451. Arranged in order of product value in 1926, we have the data for the ten leading industries as follows:

METROPOLITAN BOSTON.

(Arranged in order of product value.)

INDUSTRIES	Number of Estab- lishments	Capital Invested	Value of Stock and Materials Used	Amount of of Wages Paid during the Year	Average Number of Wage-earners Employed	Value of Products
Boots and shoes, includ- ing cut stock and find- ings	305	\$53,088,245	\$69,606,813	\$29,430,764	23,518	\$122,051,897
Electrical machinery, ap- paratus, and supplies	73	54,519,941	28,493,314	21,171,265	14,803	92,373,733
Printing and publishing	410	52,790,773	25,933,287	17,144,510	9,527	77,601,202
Clothing, men's and wo- men's	396	19,670,652	30,828,296	12,051,756	9,532	58,596,182
Slaughtering and meat- packing, wholesale	15	16,353,761	42,403,869	2,853,766	2,260	48,886,167
Bread and other bakery products	460	15,685,542	24,206,746	6,800,906	5,276	47,240,814
Confectionery	101	22,940,720	24,643,536	6,849,338	7,653	46,764,462
Boots and shoes, rubber	7	36,407,209	18,376,647	11,712,021	10,690	46,261,335
Foundry and machine- shop products	215	48,761,578	16,513,290	11,991,675	8,115	43,806,802
Rubber goods, including rubber tires and inner tubes	32	29,933,192	26,654,886	5,998,101	4,735	43,717,451

THE CITIES OF THE STATE.

Principal data having reference to manufactures in each of the 39 cities, with totals for the state, and the 316 towns grouped together, are presented in the following table:

*Principal Data Relative to Manufactures in Massachusetts Cities, 1926—
Number of Establishments, Value of Stock and Materials Used,
Amount of Wages Paid During the Year, Average Number
of Wage-earners Employed, and Value of Products.*

CITIES	Number of Estab- lishments	Value of Stock and Materials Used	Amount of Wages Paid during the Year	Average Number of Wage-earners Employed	Value of Products
<i>The State</i>	9,903	\$1,790,611,294	\$738,208,510	602,343	\$3,419,814,877
<i>39 Cities</i>	7,949	1,379,879,503	564,709,164	455,984	2,647,667,969
Attleboro	143	14,516,961	6,938,436	5,636	28,506,638
Beverly	44	3,011,982	4,454,960	3,390	11,180,889
Boston	2,568	297,896,158	110,797,398	80,722	591,191,184
Brockton	259	34,580,376	15,511,506	12,762	66,130,008
Cambridge	355	81,366,021	28,769,050	22,703	176,027,871
Chelsea	126	17,121,147	8,184,927	6,256	34,532,084
Chicopee	48	55,655,045	13,486,259	10,419	91,320,035
Everett	118	33,066,032	7,894,484	5,507	54,963,851
Fall River	239	82,393,095	29,840,233	31,353	127,637,287
Fitchburg	106	29,933,745	10,509,180	8,412	50,613,551
Gardner	77	7,685,681	5,617,878	4,651	19,516,838
Gloucester	82	8,519,952	2,537,572	2,373	15,232,632
Haverhill	361	29,242,240	14,712,306	11,917	56,988,895
Holyoke	157	42,973,541	18,993,296	16,318	86,475,701
Lawrence	173	113,930,315	31,400,308	26,777	175,251,666
Leominster	80	10,407,470	5,804,501	5,163	22,017,069
Lowell	247	38,088,035	21,008,086	20,859	77,546,542
Lynn	375	46,836,440	30,035,793	21,951	116,667,347
Malden	117	13,133,114	4,896,315	4,648	29,528,240
Marlborough	35	5,802,747	3,463,412	3,289	10,627,796
Medford	52	3,348,993	1,233,129	1,045	6,089,752
Melrose	25	2,851,530	920,688	731	5,695,257
New Bedford	197	66,457,109	35,750,517	35,143	121,034,981
Newburyport	55	6,533,056	3,521,077	3,204	13,462,882
Newton	61	8,597,681	3,124,141	2,472	16,222,994
North Adams	48	14,100,769	5,234,798	4,510	25,086,805
Northampton	45	7,605,048	4,137,893	3,406	16,016,241
Peabody	79	14,623,799	7,861,530	6,046	28,500,697
Pittsfield	61	24,364,590	12,743,119	9,209	58,093,327
Quincy	160	8,591,375	9,859,451	6,326	23,931,234
Revere	17	514,756	232,122	172	1,181,397
Salem	117	15,299,638	5,977,636	4,879	27,964,571
Somerville	140	48,573,764	6,606,888	5,316	62,629,010
Springfield	322	54,813,347	26,335,451	19,492	113,990,400
Taunton	111	14,720,219	7,882,635	6,461	31,951,593
Waltham	98	6,044,846	7,046,896	5,661	19,293,078
Westfield	66	5,324,991	4,057,170	3,117	13,619,597
Woburn	52	8,083,464	2,904,032	2,076	15,096,532
Worcester	533	103,270,431	44,424,091	31,621	205,851,497
<i>316 Towns</i>	1,954	410,731,791	173,499,346	146,359	772,146,908

The total number of manufacturing establishments in the 39 cities in Massachusetts, considered as a group, was 7,949, and the total value of products manufactured amounted to \$2,647,667,969. The value of stock and materials used in manufacture was \$1,379,879,503, and the difference between these amounts (\$1,267,788,466) represents the value added by the various manufacturing processes. The average number of wage-earners employed in the 7,949 establishments in the 39 cities during the year was 455,984, and the total amount paid in wages was \$564,709,164.

The total value of products manufactured in the 39 cities in 1926, \$2,647,667,969, constituted 77.4 per cent of the aggregate value, \$3,419,814,877, of all products manufactured in the commonwealth in that year, and the average number of wage-earners, 455,984, constituted 75.7 per cent of the average number of wage-earners, 602,343, employed in all manufacturing establishments in the state.

As a manufacturing center, Boston ranks first among the cities of the state. The value of products in 1926, \$591,191,184, constituted 17.3 per cent of the state total and the number of wage-earners employed in man-

ufacturing industries in municipal Boston constituted about 13 per cent of the state total. In order of importance, based on value of products, the twenty leading cities were: Boston, Worcester, Cambridge, Lawrence, Fall River, New Bedford, Lynn, Springfield, Chicopee, Holyoke, Lowell, Brockton, Somerville, Pittsfield, Haverhill, Everett, Fitchburg, Chelsea, Taunton and Malden.

EXPORTS.

The total value of goods manufactured and *exported* from Massachusetts establishments in 1926 amounted to \$103,789,843, or about three per cent of the total value of goods manufactured in the state in that year (\$3,419,814,877). The principal countries to which goods in excess of \$10,000,000 were shipped, in the order of importance were: England, \$15,212,229, or a little over 14.6 per cent of the total exports; South America (considered as a whole), \$13,297,872, or 12.8 per cent; Canada, \$12,818,797, or 12.4 per cent; and the West Indies, \$10,282,138, nearly 10 per cent of the total exports, of which \$7,162,859 went to Cuba.

The following table shows the principal countries of destination with the amounts exported to each arranged in the order of importance in 1926. Comparable figures are given for the year 1921 to 1926, inclusive, with the exception of 1925, for which year no data were obtained.

*Value of Goods Manufactured in Massachusetts and Exported, 1921-1926:
By Destination.*

COUNTRIES	1921	1922	1923	1924	1926
<i>Total</i>	\$96,433,932	\$94,779,949	\$92,119,605	\$100,754,813	\$103,789,843
England	16,175,141	18,019,795	16,798,845	19,859,057	15,212,229
South America ¹	6,117,457	9,191,960	8,742,695	9,138,758	13,297,872
Canada	14,474,297	12,423,919	11,769,392	11,074,847	12,818,797
West Indies	7,106,651	7,308,754	10,354,027	11,621,940	10,282,138
Cuba	4,222,721	5,069,142	7,213,003	8,180,999	7,162,859
Other West Indies	2,883,930	2,239,612	3,141,024	3,440,941	3,119,279
Australia	3,539,246	2,743,325	3,982,348	3,425,257	4,739,228
Germany	1,921,347	3,068,988	3,129,465	2,962,231	4,146,589
Mexico	3,611,791	2,702,249	2,492,189	3,058,408	3,696,363
France	3,752,379	4,266,973	4,238,845	3,456,029	3,225,760
Japan	8,252,640	5,992,039	5,987,337	4,328,743	3,098,136
Italy	806,481	945,742	1,554,904	2,606,860	2,515,576
Other Countries	30,676,502	28,116,205	23,069,558	29,222,683	30,757,155

¹ Considered as a whole.

The principal classes of goods exported, in excess of a million dollars, in 1926, in comparison with similar totals since 1921, the year 1925 excepted, are shown in the following table.

*Value of Goods Manufactured in Massachusetts and Exported, 1921-1926:
By Industries.*

INDUSTRIES	1921	1922	1923	1924	1926
<i>Total (All Industries)</i>	\$96,433,932	\$94,779,949	\$92,119,605	\$100,754,813	\$103,789,843
Foundry and machine-shop products, including electrical machinery, apparatus, and supplies	33,011,030	24,280,105	22,812,100	27,474,400	31,485,562
Leather, tanned, curried, and finished	6,746,078	11,098,886	10,338,158	12,442,803	11,598,508
Cotton goods	7,216,666	10,035,327	7,240,700	10,385,834	8,990,733
Boots and shoes, including cut stock and findings	5,243,293	6,629,244	7,587,077	7,661,923	6,539,796
Rubber goods, including rubber tires and inner tubes and rubber footwear	3,889,111	3,132,532	4,055,052	4,350,890	7,178,242
Knit goods	1,464,620	3,511,574	2,684,058	2,192,632	2,241,286
Firearms	558,392	441,658	632,016	804,599	1,064,375
Other industries	38,304,742	35,650,623	36,750,444	35,441,732	34,691,341

Index of Manufacturing Establishments.

The commonwealth publishes no official directory of manufacturers, but a card index of all establishments in the state is maintained in this division. This has been revised up to December 1926 for use in connection with the annual census of manufactures to be taken in co-operation with the federal census office for the year 1927. Requests for lists of manufacturing establishments are furnished to persons desiring them if the clerical work involved does not seriously interfere with the regular work of the division. The card catalogue is readily accessible and may be consulted for names and addresses of manufacturing establishments in any industry or locality desired.

3. PUBLIC EMPLOYMENT OFFICES.

This report covers the operations, during the fiscal year ending November 30, 1927, of the four public employment offices maintained by the commonwealth. These offices are located, respectively, at 23 Pearl street, Boston (main office); 25 Tremont street, Boston (mercantile office); Worthington street and Columbus avenue, Springfield; and 37-39 Waldo street, Worcester.

Statistical Summary.

The principal data relative to the work of the offices during the past fiscal year, with corresponding data for the fiscal year, 1926, are presented in the following table:

Summary of Business of the Four Public Employment Offices During the Fiscal Years, 1927 and 1926.*

OFFICES	1927*			1926*		
	Persons Called for by Employers	Persons Referred to Positions	Positions Reported Filled	Persons Called for by Employers	Persons Referred to Positions	Positions Reported Filled
Boston—main office	15,519	19,781	13,955	17,277	23,704	15,108
Boston—mercantile office	1,336	3,214	1,132	1,734	4,017	1,500
Springfield office	9,741	10,420	8,379	12,014	12,923	10,221
Worcester Office	7,285	7,958	5,968	9,101	9,846	7,650
Totals—four offices	33,881	41,373	29,434	40,126	50,490	34,479

* Fiscal years ending November 30.

Positions Reported Filled. The total number of positions reported filled during the fiscal year, 1927, by the four offices combined was 29,434, which was less by 14.6 per cent than the number (34,479) reported filled during the fiscal year, 1926. At each of the offices decreases were noted as follows: Boston (main office), 7.6 per cent; Boston (mercantile office), 24.5 per cent; Springfield, 18.0 per cent; and Worcester, 22.0 per cent. These decreases in the number of placements were due to a decreased demand for labor in the several districts served by the offices, notwithstanding special efforts which were made to maintain the volume of business of the previous year. The registrars were sent out regularly to visit employers for the purpose of securing positions for applicants, and through special advertising and circular letters an endeavor was made to increase the number of orders, but without any large measure of success.

Persons Called for by Employers. During the fiscal year ending November 30, 1927 the total number of persons called for by employers at the four offices combined was 33,881, as compared with 40,126 during the fiscal year ending November 30, 1926, showing a decrease of 15.6 per cent, which was slightly larger than the decrease of 14.6 per cent in the number of positions reported filled. Of the total number of persons

called for by employers, 86.9 per cent were supplied. This high percentage is evidence of the eagerness of the applicants to secure positions at a time when there was an oversupply of labor in the market.

Persons Referred to Positions. The decrease in the number of positions offered by employers noted above resulted in a proportionate decrease in the number of persons referred to positions. The total number of persons referred to positions by the four offices combined during the fiscal year, 1927, was 41,373, or 18.0 per cent less than the number (50,490) referred during the fiscal year, 1926. It is often found necessary to refer more than one person to an employer in order to fill a position offered, and this will explain why 41,373 persons were referred to employers during the fiscal year, 1927, in order to fill 29,434 positions, or an average of 1.4 persons for each position filled.

Cost of Operation. The following summary shows for the fiscal year ending November 30, 1927, the expenditures on account of each of the four offices, the number of placements (positions reported filled), and the per capita cost of placements, with corresponding data for the fiscal year ending November 30, 1926, for purposes of comparison.

Expenditures, Number of Placements, and Per Capita Cost of Placements, Fiscal Years, 1927 and 1926: By Offices.*

OFFICES.	EXPENDITURES		NUMBER OF PLACEMENTS		PER CAPITA COST OF PLACEMENTS	
	1927	1926	1927	1926	1927	1926
Boston—main office	\$32,009.05	\$31,933.58	13,955	15,108	\$2.29	\$2.11
Boston—mercantile office	5,698.37	5,749.78	1,132	1,500	5.03	3.83
Springfield	15,858.82	14,978.46	8,379	10,221	1.89	1.47
Worcester	11,024.91	10,773.87	5,968	7,650	1.85	1.41
Totals	\$64,591.15	\$63,435.69	29,434	34,479	\$2.19	\$1.84

* Fiscal years ending November 30.

The per capita cost of placements is derived by dividing the total expenditures on account of the operation of the offices by the number of placements made during the year. For the four offices combined, the per capita cost of placements was \$2.19 for the fiscal year, 1927, as compared with \$1.84 for the fiscal year, 1926. The increase of 35 cents per placement resulted from a large decrease in the total number of placements, accompanied by an increase of \$1,155.46 in the total expenditures during the fiscal year, 1927. For the several offices the per capita costs of placements during the last fiscal year were: Boston (main office), \$2.29; Boston (mercantile office), \$5.03; Springfield, \$1.89; and Worcester, \$1.85. Because of an unusually small demand for office employees in the Boston district during the past year, the mercantile office suffered a marked reduction in business and, consequently, the per capita cost of placements, in comparison with the corresponding cost for each of the other offices, was relatively high.

Records by Sex. In the following table principal data for the fiscal year, 1927, are presented by sex for each of the four offices and for the four offices combined.

Summary of Business of the Four Public Employment Offices During the Fiscal Year Ending November 30, 1927: By Offices and by Sex.

CLASSIFICATION	Registrations ¹	Persons Called for by Employers	Persons Referred to Positions ²	Positions Reported Filled ²
Boston—Main Office				
Males	5,318	11,410	13,916	10,466
Females	1,886	4,109	5,865	3,489
<i>Totals</i>	<u>7,204</u>	<u>15,519</u>	<u>19,781</u>	<u>13,955</u>
Boston—Mercantile Office				
Males	2,174	336	939	249
Females	4,081	1,000	2,275	883
<i>Totals</i>	<u>6,255</u>	<u>1,336</u>	<u>3,214</u>	<u>1,132</u>
Springfield				
Males	2,372	5,329	5,700	4,864
Females	2,278	4,412	4,720	3,515
<i>Totals</i>	<u>4,650</u>	<u>9,741</u>	<u>10,420</u>	<u>8,379</u>
Worcester				
Males	2,366	4,056	4,773	3,474
Females	1,128	3,229	3,185	2,494
<i>Totals</i>	<u>3,494</u>	<u>7,285</u>	<u>7,958</u>	<u>5,968</u>
Four Offices Combined				
Males	12,230	21,131	25,328	19,053
Females	9,373	12,750	16,045	10,381
<i>Totals</i>	<u>21,603</u>	<u>33,881</u>	<u>41,373</u>	<u>29,434</u>

¹ Applicants for positions are registered but once each year, regardless of the number of times they apply for positions during the year.

² Includes duplications of individuals who were referred to more than one position or placed in more than one position during the year.

Of the 29,434 positions reported filled during the fiscal year, 1927, by the four offices combined, 19,053, or 64.7 per cent, were filled by males. At the Boston (main office) 75.0 per cent of the positions were filled by males. The mercantile office in Boston, which operates in a special field of employment in which females predominate, found positions for a much larger number of females than males, and the number of positions filled by males constituted only 22.0 per cent of the total number of positions filled by that office. At the Springfield office the number of positions reported filled by males constituted 58.0 per cent of the total number, and at the Worcester office, 58.2 per cent. The main office in Boston was called upon to furnish a larger percentage of males out of the total number of persons called for than either the Springfield or the Worcester office, largely because of a relatively more active demand for domestic workers at the Springfield and Worcester offices.

Records by Months. The principal data relative to the work of the four offices during the fiscal year, 1927, are summarized in the following table:

Summary of Business of the Four State Offices During the Fiscal Year, 1927: By Months.

FISCAL YEAR — MONTHS	Office Days	Registra- tions	Persons Called for by Employers	Persons Referred to Positions	Positions Reported Filled
<i>1926</i>					
December	26	1,418	2,692	3,173	2,399
<i>1927</i>					
January	25	1,812	2,092	2,787	1,914
February	23	1,212	1,813	2,215	1,552
March	27	1,568	2,571	3,271	2,225
April	25	1,536	3,090	3,783	2,646
May	25	1,662	2,993	3,709	2,522
June	26 ¹	1,708	3,251	3,841	2,833
July	25	2,567	2,628	3,267	2,299
August	27	3,254	3,094	3,784	2,615
September	25	1,942	3,676	4,343	3,089
October	25	1,628	3,368	3,973	2,974
November	25	1,296	2,613	3,227	2,366
<i>Total</i>	<i>304</i>	<i>21,603</i>	<i>33,881</i>	<i>41,373</i>	<i>29,434</i>

¹ Boston offices, 25 days (closed June 17); Springfield and Worcester offices, 26 days.

According to the records presented in the foregoing table, there was a wide variation from month to month in the amount of business done by the four offices. On the basis of the demand for labor (as represented by the number of persons called for by employers) September, October and June led all other months of the fiscal year, while the demand was relatively small during January and February. The number of positions reported filled and the number of persons referred to positions during the several months of the year varied almost directly with the number of persons called for by employers. The largest numbers of applicants for employment were registered in August and July and the lowest numbers were registered in February and December.

Veterans. Special attention is given at each of the four state offices to the placement of veterans and records relative to the service rendered them are kept separately. In the following table data are presented showing, for each of the offices, the number of veterans registered, the number referred to positions, and the number of positions reported filled during the fiscal years, 1927 and 1926.

Number of Veterans Registered, Referred to Positions, and Reported Placed, Fiscal Years, 1927 and 1926: By Offices.

OFFICES	Number of Registra- tions ¹	1927 Number Referred to Positions ²	Number of Positions Reported Filled ²	Number of Registra- tions ¹	1926 Number Referred to Positions ²	Number of Positions Reported Filled ²
Boston (main office)	1,119	2,935	2,188	1,526	3,031	2,297
Boston (mercantile office)	141	38	23	285	146	71
Springfield	67	506	463	115	407	248
Worcester	88	534	447	85	634	503
<i>Totals</i>	<i>1,415</i>	<i>4,013</i>	<i>3,121</i>	<i>2,011</i>	<i>4,218</i>	<i>3,119</i>

¹ Applicants for positions are registered but once each year, regardless of the number of times they apply for positions during the year.

² Includes duplications of individuals who were referred to more than one position or placed in more than one position during the year.

Notwithstanding the fact that there was a large decrease in the number of veterans registered during the fiscal year, 1927, as compared with the number registered during the fiscal year, 1926, there was a slight increase in the number of positions reported filled by veterans, from 3,119 during the fiscal year, 1926, to 3,121, during the fiscal year, 1927. In explanation of the fact that the number of positions reported filled by veterans and the number referred to positions exceeded the number registered, it should be stated that many of those registered were referred to more than one position or placed in more than one position during the year specified. The records of the four offices, combined, show that of the 19,053 positions reported filled by males during the fiscal year, 1927, 3,121, or 16.4 per cent, were reported filled by veterans.

Co-operation with the United States Employment Service.

During the past year the department has continued to co-operate with the United States Employment Service. The Commissioner of Labor and Industries serves as Federal Director for Massachusetts, and the Director of Statistics, as Assistant Federal Director, is in immediate charge of this co-operative work. The federal service provides for the payment of salaries of two employees, one of whom serves as examiner-in-charge of the mercantile employment office, and the other as superintendent of the Westfield office (a federal-municipal office). The total cash contribution of the federal bureau toward the employment service in Massachusetts during the calendar year on account of salaries was \$4,060, and there was also some saving to the department as a result of the use of the franking privilege.

In addition to the four state offices, eleven other offices in Massachusetts are now co-operating with the federal service. These are as follows:

Boston	Municipal Employment Bureau
	Boston Urban League
	Boston Clearing House for Men
Fitchburg	American Legion, Post No. 10
Framingham	Civic League
Lowell	Civic Employment Bureau (Municipal)
	Chamber of Commerce
New Bedford	Young Women's Christian Association
Waltham	Chamber of Commerce
Watertown	Chamber of Commerce
Westfield	Municipal Employment Bureau

Three offices—the Boston Clearing House for Men, the New Bedford Young Women's Christian Association, and the Watertown Chamber of Commerce entered into co-operative relations with the federal service during the past year and no offices withdrew.

The co-operating offices are required to furnish monthly reports and to conform to certain regulations with reference to their operation. The federal service supplies certain standard forms for their use, grants the use of the franking privilege in connection with their placement work, and, in some instances has loaned them furniture and office equipment.

APPROPRIATIONS.

The appropriations authorized for the use of the Division of Statistics during the fiscal year ending November 30, 1927 amounted to \$116,135.00, and the actual expenditures amounted to \$114,299.19, leaving an unexpended balance of \$1,835.81, of which the sum of \$1,000 is being reserved for payment of an outstanding bill for printing.

Financial Statement.

Fiscal Year Ending November 30, 1927.

	Appropriations.	Expenditures.	Unexpended Balance.
Statistical Services:			
Personal services	\$39,885.00	\$39,862.86	\$22.14
Expenses	11,500.00	9,845.18*	1,654.82
Totals	\$51,385.00	\$49,708.04	\$1,676.96
Public Employment Offices:			
Personal services	\$50,250.00	\$50,241.80	\$8.20
Expenses	14,500.00	14,349.35	150.65
Totals	\$64,750.00	\$64,591.15	\$158.85

* Not including one outstanding bill estimated at \$1,000 for printing.

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